



**Two Levels of Motivation and Two Types of Well-Being:  
Relations Between General and Goal-Specific Motivations,  
and Eudaimonic and Hedonic Well-Being**

by

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## Abstract

In this thesis I assess the individual and joint predictive associations and effects between multiple motivation and well-being concepts. In particular, three pairs of motivation concepts (intrinsic/extrinsic, approach/avoidance, and eudaimonic/hedonic) are assessed simultaneously at two levels of analysis (disposition and goal) and examined in relation to two types of well-being (eudaimonic and hedonic) in two studies, one correlational and the other experimental. **Study 1:** Using a correlational design, participants ( $N = 325$ ,  $M$  age = 19.10, 87% female) completed self-report measures assessing six motivation and two well-being concepts. Exploratory factor analyses were used to assess patterns of associations among the motivational constructs. Results indicated that constructs displaying conceptual and empirical similarities co-occur, particularly, intrinsic, approach and eudaimonic motivation. Regression models were used to assess predictive relations between the motivational constructs and well-being. Both types of well-being were predicted by approach and avoidance dispositions, and hedonic goals. Additionally, eudaimonic well-being was uniquely predicted by eudaimonic dispositions and goals, and intrinsic dispositions; and hedonic well-being was uniquely predicted by extrinsic dispositions and approach goals. The patterns of associations among motivational constructs, and similarities and differences in the ways they predict each type of well-being, are discussed. **Study 2:** Using an experimental design, participants ( $N = 447$ ,  $M$  age = 19.30, 88% female) were randomly assigned to one of eight experimental conditions, each involving a manipulation aimed at priming combinations of the three pairs of motivational constructs at the goal level. Participants then completed measures of both types of well-being. ANOVAs were used to assess the

main effects and interactions of experimental condition for each of the three pairs of motivational constructs on well-being. Main effects of experimental conditions were non-significant. However, results indicated that focus on each of the three pairs of motivational constructs predicted well-being and that the manipulation impacted well-being indirectly, through experimentally-shifted motivational focus. Few interactions emerged. Implications for future experimental research and the conceptual integration of motivation and well-being constructs are discussed. In conclusion, Studies 1 and 2 inform the motivation and well-being fields in novel ways and provide preliminary steps towards studying these fields from an integrated and comprehensive motivational framework.

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## **Introduction**

This thesis examines the associations between three pairs of motivational constructs (intrinsic/extrinsic, approach/avoidance, and eudaimonic/hedonic) and two types of well-being (eudaimonic and hedonic). The three pairs of motivational constructs have previously been studied separately with regards to their associations with well-being. By examining these motivational constructs together, it will be possible to determine how they jointly (and individually) predict and influence eudaimonic and hedonic well-being. Two studies were undertaken. The first study used a correlational design to determine how the motivational constructs relate to each other and to both types of well-being. The second study used an experimental approach to manipulate the motivational constructs to examine how they influence both types of well-being. Taken together, the two studies inform the motivation and well-being fields in novel ways.

### **Well-Being Traditions: Eudaimonic and Hedonic**

**Defining the two forms of well-being.** Psychological research on well-being is dominated by two traditions (Ryan & Deci, 2001). Whereas the hedonic tradition emphasizes enjoyment, happiness, and satisfaction with one's life (Diener, 1984), the eudaimonic tradition conceptualizes well-being in terms of meaning and purpose (Ryan & Deci, 2001). See Table 1 for a summary of the concepts described below.

The hedonic tradition has its roots in Greek philosophy with Aristippus's 4<sup>th</sup> century B.C. writings emphasizing the maximization of pleasure and the minimization of pain (Ryan & Deci, 2001). The current conception of hedonic well-being reflects this tradition, with a focus on feeling "good" as well as judging one's life to be satisfying. Hedonic well-being, most often assessed as "subjective well-being" (Diener, 1984), is

Table 1

*Summary of Well-Being and Motivational Concept Definitions from the Reviewed Literature*

Concept	Level	Definition	Focus
Hedonic well-being		High life satisfaction, high positive affect, low negative affect	Feeling “good” and satisfied about one’s life
Eudaimonic well-being		Positive relationships, personal growth, life purpose, mastery, autonomy, and self-acceptance	Feeling meaning, purpose, and authenticity in one’s life
Intrinsic	Disposition	Personally chosen, autonomous motivation	Cause and initiator of behaviour
	Goal	Pursued for personally valuable reasons	Source and content of goal
Extrinsic	Disposition	Externally influenced, controlled motivation	Cause and initiator of behaviour
	Goal	Pursued for external rewards and gain	Source and content of goal
Approach	Disposition	High behavioural activation system sensitivity, positive emotionality, and extraversion	Greater sensitivity to reward stimuli
	Goal	Work towards and achieve	Structure of and strategy for acquiring goal
Avoidance	Disposition	High behavioural inhibition system sensitivity, negative emotionality, and neuroticism	Greater sensitivity to punishment stimuli
	Goal	Move away from and avoid	Structure of and strategy for acquiring goal
Eudaimonic	Disposition	Authenticity and growth oriented	Underlying reason for activities and behaviours
	Goal	Seeking meaning and purpose	Outcome sought and reason for pursuing goal
Hedonic	Disposition	Enjoyment oriented	Underlying reason for activities and behaviours
	Goal	Seeking satisfaction and enjoyment	Outcome sought and reason for pursuing goal

defined with respect to the presence of positive affect, the absence of negative affect, and a subjective appraisal of satisfaction with one's life overall (Diener, 2000), based on the criteria or standards individuals judge to be personally important or meaningful (Diener, Sapyta, & Suh, 1998).

The eudaimonic tradition also has its roots in Greek philosophy, specifically, Aristotelian philosophy, and holds that an all-encompassing sense of well-being refers to living one's life according to one's full human potential (Ryan & Deci, 2001), including a sense of meaning, purpose, and authenticity (Waterman, 1993). Furthermore, according to Ryff (1989), eudaimonic well-being is represented by six dimensions of positive human functioning: positive relationships, personal growth, life purpose, mastery, autonomy, and self-acceptance.

**Measuring the two types of well-being.** Early work in subjective well-being used single-item, self-report measures to assess each respective component (Diener, 2000). More recently, multiple-item, self-report measures are used to examine life satisfaction, such as the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). Positive and negative affect are typically assessed in one measure, with a subscale for each set of emotions (Diener, 2000). These affective experiences are generally assessed in terms of their intensity, using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), or more recently, their frequency, using the Schedule of Positive and Negative Experience (SPANE; Diener et al., 2010). Though a vast amount of research has been conducted using self-report methods for assessing hedonic well-being, other methods such as experience sampling and observer

reports have also been popularized (Diener, 2000). These various methods have inter-correlations ranging from moderate to strong (Sandvik, Diener, & Seidlitz, 1993), demonstrating relative consistency among measurements of hedonic well-being. Further, in a discussion on whether positive and negative affect should be assessed as separate constructs, Diener (2000) stated that:

It is desirable to measure them separately because different conclusions often emerge about the antecedents and consequences of these two types of affect.

Although researchers can combine positive and negative affect into an “affect balance” or global “happiness” score, they may lose valuable information about the two types of affect (p. 36).

Although the underlying structure of subjective well-being elements may be represented in various ways (Busseri & Sadava, 2011), there is evidence that positive affect, negative affect, and life satisfaction are related to one another and load onto an overall subjective well-being factor (Busseri & Sadava, 2011).

With respect to measuring eudaimonic well-being, the six facets of positive functioning proposed by Ryff (1989) are typically measured through self-report in the Scales of Psychological Well-Being (PWB; Ryff & Keyes, 1995). Seeking to expand the measurement of eudaimonic well-being further, Waterman et al. (2010) developed the self-report Questionnaire for Eudaimonic Well-Being (QEWB), which assesses both subjective (i.e., feelings of eudaimonia) and functional (i.e., eudaimonic activities) aspects of eudaimonia. These eudaimonic well-being measures demonstrate convergent validity, with a correlation of .63 between the composite scores for the PWB and QEWB scales (Waterman et al., 2010). Note that in addition to these two scales that aim to cover

a wide range of subcomponents of eudaimonic well-being, as well as a general assessment of this construct, other scales more specific to particular facets of eudaimonic well-being also have been developed and studied (e.g., elevating experiences, Huta & Ryan, 2010; meaning in life, Huta & Ryan, 2010; subjective vitality, Ryan & Frederick, 1997). In the present work, I focus on the more broad-based measures as a means to capture eudaimonic well-being at a broader level.

### **Differences and similarities: Are the two types of well-being distinct?**

Although eudaimonic and hedonic well-being are conceptually distinct, the degree to which they differ empirically is less clear. Typically, measures of both types of well-being are positively correlated, often quite strongly so. For example, Keyes, Shmotkin, and Ryff (2002) explored the overlap of eudaimonic and hedonic well-being using exploratory and confirmatory factor analysis. Results based on a large representative sample of American adults revealed that although there was evidence for one overarching well-being factor, a model with two factors (eudaimonic and hedonic) proved to be a better fit to the data. Nonetheless, correlations between hedonic well-being and eudaimonic well-being factors in the various models ranged between .45 and .84, suggesting the two factors are highly related. Despite this, both Ryff and Singer (1998) and Diener et al. (1998) note that an individual could possess one type of well-being but lack the other. For example, a person who has low positive affect could have extremely high meaning and purpose in his or her life. The opposite may also be true; individuals could experience high positive affect and life satisfaction, while lacking a sense of meaning and purpose. Assessing the two types of well-being separately allows this to be taken into account. Indeed, although eudaimonic and hedonic could be combined into one

overall well-being factor (Keyes et al., 2002), neither eudaimonic nor hedonic well-being on its own can provide a full picture of the broader sense of what it means to experience or “have” wellness.

**Sources of hedonic and eudaimonic well-being.** With respect to how individuals acquire eudaimonic and hedonic well-being, there are distinct differences as well as overlap between the sources of and routes to these two types of well-being.

*Sources of hedonic well-being.* According to Lyubomirsky, Sheldon, and Schkade (2005), results across published studies demonstrate that genes account for 50%, and life circumstances account for 10%, of the variance in subjective well-being. These authors suggest that the remaining 40% of the variance in subjective well-being is likely accounted for by “intentional activity” (Lyubomirsky et al., 2005). The presence of genetic and biological influences on subjective well-being has implications for the chronic level of happiness exhibited by individuals. It has been estimated that genetics predict 40% of the variability in positive affect and 55% of the variability in negative affect (Tellegen, Lykken, Bouchard, Wilcox, Segal, & Rich, 1988). Thus, there appears to be a relatively strong genetic component contributing to stability in subjective well-being (Diener, Oishi, & Lucas, 2002).

Personality traits also play a role with regards to individual differences in subjective well-being (Diener & Lucas, 1999). The personality traits most commonly linked to subjective well-being are extraversion (with greater positive affect) and neuroticism (with greater negative affect; Diener & Lucas, 1999). Agreeableness, conscientiousness, and openness to experience show weaker and less stable relations (Diener et al., 2002). “Thus it can be said that an extraverted non-neurotic has a head start

in achieving happiness” (Diener et al., 2002, p. 67). Additionally, stable aspects of cognition such as the processing and accessibility of positive and negative information have shown relations to life satisfaction appraisals.

Life circumstances—accounting for 10% of the variance in subjective well-being—include demographic factors such as age, sex, race, and geographic location (Lyubomirsky et al., 2005). Influential life events and status (i.e., class, income) are also identified as contributive to subjective well-being. Lyubomirsky et al. (2005) note it is paradoxical that life circumstances, as influential as they seem, account for only 10% of the between-person variance in subjective well-being. The authors believe that the adaptivity of humans reduces the impact of life circumstance factors over time. Even when novel changes take place (i.e., a new job), these new circumstances quickly become a constant in individuals’ lives, so that their overall effects on subjective well-being are kept at a minimum.

This adaptivity has been supported by research demonstrating the relative stability of subjective well-being levels. Headey and Wearing (1989) attributed this stability to a subjective well-being “set-point,” which varies by individual (Diener, Lucas, & Scollon, 2006), proposing that individuals maintain a certain level of well-being that fluctuates occasionally as a result of major life events (Headey & Wearing, 1989). This effect is particularly strong with the affective components of subjective well-being (Headey, Holmstrom, & Wearing, 1984). The key to this process, according to the Dynamic Equilibrium Model, is that subjective well-being returns to its original level, or set-point (Headey & Wearing, 1989). Generally, these set points tend to be on the more positive end of the happiness continuum (Diener et al., 2006), such that regardless of

socioeconomic status, race, and geographical location, the vast majority of individuals report themselves to be happy (i.e., above neutral; Diener & Diener, 1996).

Cummins's (1998) idea of subjective well-being as homeostatic highlights the importance of a set point, but also incorporates a subjective well-being set point range. Individuals will fluctuate within this range in response to daily life events and challenges they may face (Cummins, 2010). However, when individuals are faced with extremely challenging events, the homeostatic mechanism managing subjective well-being may fail, causing subjective well-being levels to decline greatly (Cummins, 2010). Like Headey et al. (1984), Cummins's (2010) model stresses the affective aspects of subjective well-being, stating that the mechanism regulating well-being is aimed at maintaining a Homeostatically Protected Mood (happiness, contentment, positive affect), which facilitates positive self-perceptions, and ultimately contributes to the stability of and long-term levels of life satisfaction.

If genetics and life circumstances are not controllable, and individuals have an inevitable set point, is it feasible for hedonic well-being to be permanently altered? Research has demonstrated that long-term changes in hedonic well-being do take place in response to life events (Diener et al., 2006). For example, a longitudinal study measuring happiness over a 17 year period found that although the majority of participants displayed relative stability, 24% of the sample had significant changes in happiness (Fujita & Diener, 2005). This suggests that events, when significant enough, can cause long-term changes in well-being, altering individuals' set-points. A number of events such as disability (Lucas, 2007), unemployment (Lucas, Clark, Georgellis, & Diener, 2004), and



negative changes in marital status (Lucas, Clark, Georgellis, & Diener, 2003) have been associated with long-term changes in subjective well-being.

The third predictor of subjective well-being, intentional activity, refers to behavioural, cognitive, and volitional activities, and is broadly defined as “things that people do and think in their daily lives,” (Lyubomirsky et al., 2005, p. 15). Whereas genetics and life circumstances primarily include elements occurring without choice, intentional activity requires individuals to act on their environment. These intentional activities—accounting for 40% of the variability in subjective well-being—are self-determined and effortful in nature. The subcategory of volitional activities has been a particular interest for researchers studying intentional activity, in part because these types of activities appear to have strong and unique associations with well-being. Specifically, striving towards and achieving personally salient goals impacts all three elements of subjective well-being, increasing life satisfaction and positive affect while decreasing negative affect. Because intentional activities, specifically volitional activities, can be manipulated and altered in ways that genetics and life circumstances cannot, it has been suggested that this should be a primary focal area for well-being interventions (Lyubomirsky et al., 2005).

Indeed, individuals may be able to control their own hedonic well-being, and prevent returning to their “set-point.” Specifically, Sheldon and Lyubomirsky (2012) propose the Hedonic Adaptation Prevention Model, which posits that appreciation for and variation in events and activities that boost hedonic well-being will maintain the heightened sense of well-being. Continuing to feel grateful and appreciate the event that boosted well-being allows one to savour it, relishing in the positive emotion as opposed

to diminishing its novelty. Similarly, variety in activities or events that cause a boost in self-esteem prevent against adaptation to that boost.

*Sources of eudaimonic well-being.* Similar to hedonic well-being, eudaimonic well-being has also been linked to stable factors of individuals' lives, such as personality traits and demographic factors (Ryan & Deci, 2001). Research has demonstrated that the Big Five personality traits show strong relations to all six of Ryff's (1989) facets of psychological well-being. Personal growth is positively related to openness to experience, positive relationships are related to higher agreeableness and extraversion, and autonomy is negatively related to neuroticism (Schmutte & Ryff, 1997). Self-acceptance, mastery, and life purpose are all positively related to extraversion and conscientiousness, and negatively related to neuroticism. Ryff's dimensions of eudaimonic well-being have also shown relations to demographic factors such as a positive association with socio-economic status (Ryff, Magee, Kling, & Wing, 1999) and age (Ryff, 1989), such that environmental mastery and autonomy increase with age, and personal growth and purpose tend to decrease with age.

Consistent with the conceptualization of eudaimonic well-being as a process (Ryan, Huta, & Deci, 2008), research on its sources has tended to focus on what people do. Engaging in personally expressive activities that serve to develop one's full potential has emerged as a primary source of eudaimonic well-being (Waterman 1993; Waterman, Schwartz, & Conti, 2008; Waterman et al., 2010). Within these activities, self-determination, a balance of skills and challenges, and considerable effort result in increased eudaimonic well-being (Waterman et al., 2008). Activities that give rise to increased eudaimonic well-being are motivated by the perceived inherent value and

importance in engaging in the activity (Waterman et al., 2010), and therefore are highly intrinsic in nature.

Additionally, researchers have proposed that the impact self-determined engagement in intrinsic goals has on eudaimonic well-being is mediated by the degree to which one's basic psychological needs of autonomy, competence, and relatedness are fulfilled (Ryan et al., 2008). Autonomy refers to the need to behave in self-determined, volitional ways, and competence refers to a need for feelings of efficacy. The need for relatedness represents a desire to feel connected to others in meaningful ways (Ryan et al., 2008), a requirement for eudaimonic well-being similarly highlighted by Ryff's theory (Ryff 1989; Ryff & Singer, 1998). Niemiec, Ryan, and Deci (2009) provided evidence for this idea, with the results of their study demonstrating that intrinsic goal pursuit positively predicts eudaimonic well-being (as measured by Ryff's Scales of Psychological Well-Being) and that this relationship is mediated by the satisfaction of basic psychological needs. Interestingly, the satisfaction of these same basic needs have also been shown to predict components of hedonic well-being, including positive and negative affect (e.g. Sheldon, Ryan, & Reis, 1996; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000).

A further parallel between eudaimonic and hedonic well-being is that, like hedonic, eudaimonic well-being may change over time. When participants engaged in eudaimonic activities (beyond what they typically would in a day) for a 10-day intervention, they had subsequent increases in eudaimonic well-being (Huta & Ryan, 2010). In order to maximize the impact of well-being, participants were asked to vary these activities. Although this is a relatively short period of time, a three month follow-up

revealed that increases in elevating experience and vitality were still present, thus substantiating the findings that eudaimonic well-being can change as a result of activities engaged in.

**Summary.** Though previous research has demonstrated different sources of eudaimonic and hedonic well-being, the sources themselves tend to stem from several common categories: predispositions and personality, demographic and life circumstances, and activities. These commonalities support the idea that eudaimonic and hedonic well-being together reflect a more general underlying well-being concept. Further, whereas the first two categories of sources of well-being are largely beyond individuals' personal control, the sources of eudaimonic and hedonic well-being also overlap with respect to the pursuit and engagement in personally-valued activities. That is, as discussed next, individuals who are motivated to pursue self-relevant goals may reap the benefits of both hedonic and eudaimonic well-being.

### **Motivation and Well-Being**

Motivation is an important predictor of eudaimonic and hedonic well-being. In the following sections, I review research examining links between well-being and three pairs of motivational constructs (Table 1 summarizes the motivational constructs described below; Table 2 summarizes associations between the motivational constructs and well-being concepts that are detailed below). Additionally, I draw parallels between the various motivational constructs, and describe the value of joint examination of motivational constructs with respect to their role in promoting eudaimonic and hedonic well-being.

Table 2

*Summary of Empirical and Theoretical Associations among Motivational and Well-Being Concepts*

	1	2	3	4	5	6	7	8	9	10	11	12	HWB	EWB
1. Intrinsic Disposition		+	+	+	(+)	+		(-)	(+)	(+)			+	++
2. Intrinsic Goals	+			+		+	(-)	-	(+)	(+)			+	++
3. Extrinsic Disposition	+			+			(+)	+			(+)		-	--
4. Extrinsic Goals		+	+				(+)	+				(+)	-	--
5. Approach Disposition	+					+	-		(+)	(+)	(+)	(+)	+	+
6. Approach Goals	+	+			+			+	(+)	(+)	(+)	(+)	+	+
7. Avoidance Disposition		(-)	(+)	(+)	-			+			(+)	(+)	-	-
8. Avoidance Goals	(-)	-	+	+		+	+				(+)	(+)	--	--
9. Eudaimonic Disposition	(+)	(+)			(+)	(+)				(+)	+		+	++
10. Eudaimonic Goals	(+)	(+)			(+)	(+)			(+)		-		(+)	++
11. Hedonic Disposition			(+)		(+)	(+)	(+)	(+)	+			(+)	++	+
12. Hedonic Goals				(+)	(+)	(+)	(+)	(+)		-	(+)		++	+

*Note.* Entries should be read by row. Values in parentheses indicate conceptual or theoretical similarity. Multiple + and – signs indicate stronger relationships in the HWB and EWB columns. A blank cell indicates that the relationship has not been identified in previous literature.

### **Intrinsic and extrinsic motivation.**

*Motivational dispositions and well-being.* According to Self-Determination Theory, (SDT; Deci & Ryan, 1985a) general motivational disposition and motivation towards specific goals can be characterized as either intrinsic or extrinsic. At a dispositional level, intrinsic motivation is represented as an autonomous orientation. Individuals with a highly autonomous motivational disposition tend to act in volitional and self-determined ways, which allow them to pursue their activities in ways that are personally valuable. Measured on a continuum, intrinsic motivation is the ideal of autonomous functioning. In contrast, individuals high in the controlled orientation are easily externally-influenced and constrained by societal and relational pressures (Deci & Ryan, 2008). Also measured on a continuum, extrinsic motivation characterizes individuals high in controlled functioning. Previous research has demonstrated that the association between these motivational orientations, although positive, is not significant (e.g., Deci & Ryan, 1985b), supporting the idea that the autonomous and controlled orientations are independent of one another.

Both autonomous and controlled orientations have shown links to well-being. For example, having a highly autonomous orientation is related positively to both eudaimonic and hedonic well-being, including higher psychological well-being, positive affect (Deci & Ryan, 2008), higher life satisfaction, meaning, personal growth, vitality, self-esteem (Weinstein, Przybylski, & Ryan, 2012), and greater self-actualization (Neyrinck, Vansteenkiste, Lens, Duriez, & Hutsebaut, 2006), as well as lower negative affect, depression, anxiety, and contingent self-esteem (Weinstein et al., 2012). Such findings

highlight the positive links between intrinsic motivation and both eudaimonic and hedonic well-being. It is important to note that while an autonomous orientation shows significant relations to both eudaimonic and hedonic well-being, it is most strongly correlated to indicators of eudaimonic well-being (i.e., personal growth; Weinstein et al., 2012). Overall, greater relative autonomy is strongly positively associated to well-being, including both eudaimonic and hedonic elements (Neyrinck et al., 2006).

Whereas the research highlights the positive relations of an autonomous orientation to well-being, it also highlights the negative relations associated with a controlled orientation. For example, a more externally regulated disposition is negatively associated with self-actualization, as well as a well-being composite including both eudaimonic (i.e., self-actualization) and hedonic (i.e., life satisfaction) elements (Neyrinck et al., 2006). Together, these findings suggest that a controlled orientation may have costs both personally and interpersonally (Ryan & Deci, 2000), as well as hedonically and eudaimonically.

***Goal motivation and well-being.*** Intrinsic and extrinsic goals represent the content, aims, and sources of personal goals and activities. Intrinsic goals are held for autonomous reasons and are pursued in order to achieve personal and meaningful goals, such as ones that help the community or build social ties. The content of intrinsic goals tends to be pro-social and related to affiliation, growth, and acceptance (Sheldon & Kasser, 2001). Extrinsic goals are adopted for more controlled reasons and are held and evaluated based on outside sources and external judgments of worth (Deci & Ryan, 2008). The specific content of extrinsic goals tends to be related to things such as image,

wealth, fame, and status (Sheldon & Kasser, 2001). Previous research has shown that various intrinsic and extrinsic goals load onto two distinct factors and show very different association patterns with well-being indicators (Kasser & Ryan, 1996). Thus, although the importance placed on intrinsic and extrinsic goals shows a small, positive correlation, these goal types are believed to be distinct.

Both intrinsic and extrinsic goals have shown links to well-being. Intrinsic goals tend to be self-concordant, that is, they are congruent with one's true self (Sheldon & Kasser, 2001). This self-concordance is believed to lead to sustained effort and engagement in an activity, resulting in greater fulfillment of basic psychological needs and subsequent boosts in hedonic well-being (Sheldon & Kasser, 1998; Sheldon & Elliot, 1999). In particular, progress towards goals that are intrinsic in content, as well as goals aimed at intrinsic outcomes, are associated with higher subjective well-being, both immediately and over time (Sheldon & Kasser, 1998). Other research has supported this idea, finding that individuals with more intrinsic goals score higher in measures of both eudaimonic and hedonic well-being (Rijavec, Brdar, & Miljkovic, 2011).

Further, individuals who place high importance on intrinsic goals have the highest psychological well-being, with greater scores on elements of eudaimonic well-being, including self-actualization and subjective vitality (Kasser & Ryan, 1993). Hedonic well-being is also related to intrinsic goals in similar ways, with individuals who pursue intrinsic goals scoring the highest in subjective well-being; including greater life satisfaction and positive affect (Kasser & Ryan, 1993; 1996; Romero, Gomez-Fraguela, & Villar, 2012; Sheldon, Ryan, Deci, Kasser, 2004).



Extrinsic goals, being externally influenced, tend to lack this integration of the authentic self and the goal (Sheldon & Kasser, 2001) and individuals who place stronger importance on extrinsic goals score lower on measures of eudaimonic well-being relative to those who place less importance on such goals (Kasser & Ryan, 1993). Extrinsic goals are also related negatively to elements of subjective well-being, with the strongest associations to greater negative affect (e.g., Romero et al., 2012). Overall, individuals who place a high importance on extrinsic goals have lower subjective well-being than those who place less importance on such goals (Kasser & Ryan, 1993; 1996; Sheldon et al., 2004).

Though a large portion of the findings suggest that only intrinsic goals are related to higher eudaimonic and hedonic well-being, some research has suggested that both intrinsic and extrinsic goals contribute positively to subjective well-being (Rijavec et al., 2011). Specifically, Rijavec et al. (2011) found that participants high in both intrinsic and extrinsic goals had the highest life satisfaction and subjective vitality. Other research has suggested that the balance of intrinsic and extrinsic goals may be important in predicting well-being. For example, Sheldon et al. (2004) demonstrated that subjective well-being is negatively impacted only when intrinsic and extrinsic goals are unbalanced, with an overvaluation of extrinsic goals.

***Associations between the disposition and goal levels.*** Although intrinsic and extrinsic dispositions and goals have individual associations with eudaimonic and hedonic well-being, the two levels also interrelate. Whereas individuals high in autonomy (i.e., high intrinsic motivation disposition) tend to hold more intrinsic goals, individuals

high in control (i.e., high extrinsic motivation disposition) tend to hold more extrinsic goals (Kasser & Ryan, 1993; Ryan et al., 2008). Generally, results demonstrate that high autonomous motivation and high intrinsic goal content are associated with the highest subjective well-being (Sheldon et al., 2004). Although these levels are related, Sheldon et al. (2004) demonstrated, across three studies, that both intrinsic and extrinsic motives and goal content are unique predictors of hedonic well-being, highlighting the unique roles of both motivational disposition and goal-specific motivation in predicting well-being.

**Summary.** In sum, intrinsic and extrinsic motivation at both the dispositional and goal levels are related to eudaimonic and hedonic well-being in consistent ways. Also, the levels appear to be related, such that individuals with an intrinsic disposition tend to have intrinsic goals, and individuals with an extrinsic disposition tend to have extrinsic goals. Thus, intrinsic and extrinsic dispositions, and intrinsic and extrinsic goals have important individual associations with eudaimonic and hedonic well-being. Additionally, they may also interact in ways that relate to both types of well-being.

### **Approach and avoidance motivation.**

**Motivational dispositions and well-being.** Stemming from the work of Gray (1987) and Carver and White (1994), approach and avoidance refer, respectively, to the motivational tendencies of individuals either to move towards and bring together the real and desired state (Tamir & Diener, 2008), or to move away from and increase the discrepancy between the real and undesired state. Generally speaking, “approach motivation facilitates growth and flourishing, while avoidance motivation facilitates protection and survival” (Tamir & Diener, 2008, p. 417). At a dispositional level, this

distinction is referred to as an approach or avoidant temperament (Elliot & Thrash, 2002; 2010). An approach temperament is a general sensitivity to reward stimuli, characterized by high extraversion, high behavioural activation system sensitivity, and high positive emotionality. An avoidance temperament is a general sensitivity to punishment stimuli, characterized by high neuroticism, high behavioural inhibition system sensitivity, and high negative emotionality. These temperaments are believed to be relatively stable aspects of personality (Elliot & Thrash, 2010). Additionally, approach and avoidance temperaments show a modest, negative correlation, indicating that a greater motivational disposition to approach is accompanied by a lower dispositional tendency to avoid.

Given that positive and negative emotionality are components of approach and avoidance temperaments, links with hedonic well-being are to be expected. Specifically, research has shown that whereas an approach temperament is associated with positive affect, an avoidance temperament is associated with negative affect (Elliot & Thrash, 2010). As noted in a previous section, research has also found that the personality variables associated with the two temperaments are related to subjective well-being. Whereas extraversion is positively associated with life satisfaction and positive affect, and negatively associated with negative affect, neuroticism is positively associated with negative affect and negatively associated with life satisfaction and positive affect (DeNeve & Cooper, 1998). Additionally, as extraversion increases and neuroticism decreases, the probability of the combination of high eudaimonic and hedonic well-being increases (Keyes et al., 2002). Thus, an overall sense of well-being, both eudaimonic and hedonic, is associated with components of an approach temperament.

***Goal motivation and well-being.*** The approach/avoidance dichotomy is also applied at the goal level, referring to the structure of, and strategy for achieving one's daily and life goals (Elliot, Thrash, & Murayama, 2011). Approach goals are aimed at achieving a goal or outcome by actively moving toward it. In contrast, avoidance goals are aimed at achieving a goal or outcome by actively moving away from, or avoiding something. It is important to note that whether a particular goal is classified as approach or avoidance depends on the individuals' framing of the goal in an approach or avoidant manner. Several studies have found that there is a positive association between approach and avoidance goals (Elliot & Church, 1997; Elliot & Harackiewicz, 1996), though individuals typically have an unbalanced approach to avoidance goal ratio, such that the majority of goals tend to be approach. Thus, a focus of research is when the ratio becomes unbalanced in the opposite direction—favouring avoidance goals—and how this relates to aspects of well-being.

Whereas approach goals have been associated with positive hedonic well-being outcomes, avoidance goals have been highlighted in the literature as negatively associated with subjective, or hedonic, well-being (Elliot & Church, 2002; Elliot & Sheldon, 1997; Elliot et al., 2011). Specifically, one study found that as the number of avoidance goals increases, so too did the longitudinal decreases in subjective well-being over the course of a semester (Elliot et al., 2011). These findings held even when controlling for avoidance disposition, suggesting that avoidance goals may have a unique negative association with hedonic well-being. A similar pattern is evident when examining specifically daily (vs. life) goals—if focused on avoiding outcomes, lower life

satisfaction has been observed (King, Richards, & Stemmerich, 1998). Eudaimonic well-being is similarly predicted by avoidance goals. For example, Elliot et al. (2012) found that avoidance goals negatively predict eudaimonic well-being (self-actualization and vitality) in both an American and a Japanese sample. A second study found that avoidance goals significantly predicted longitudinal changes in eudaimonic well-being (Elliot et al., 2012); in this study, avoidance goals did not predict longitudinal changes in negative affect or life satisfaction, but did negatively predict changes in positive affect in the American sample.

Other research has also examined the interaction between approach and avoidance goals in specific domains. For example, a study by Nikitin and Freund (2010) looked beyond the individual relationships of approach and avoidance goals and examined the co-occurrence of approach and avoidance motivation in the social domain. Irrespective of the strength of approach motivation, or the interaction between approach and avoidance motivation, avoidance motivation was negatively related to both eudaimonic and hedonic well-being components (Nikitin & Freund, 2010). This suggests that the two types have independent effects, and that approach motivation does not act as a buffer against avoidance motivation in the social domain. Overall, having more approach goals is associated with higher hedonic well-being (Tamir & Diener, 2008). Research has also demonstrated a positive association between approach goals in specific domains and overall well-being. For example, having approach goals toward interpersonal relations is a predictor of longitudinal increases in subjective well-being (Elliot, Gable, & Mapes, 2006).

***Associations between the disposition and goal levels.*** Whereas individuals with an approach temperament tend to adopt approach goals, individuals with an avoidance temperament tend to adopt avoidance goals (Elliot & Thrash, 2002). Both approach and avoidance goals can be meaningful to individuals (Tamir & Diener, 2008) and goals that hold more personal meaning are stronger predictors of increased well-being with regards to positive and negative affect (Brunstein, Schultheiss, & Grassman, 1998).

***Summary.*** Both approach and avoidance dispositions and goals are associated with well-being, with the clearest links to hedonic well-being. Research has generally found that whereas approach motivation at the dispositional and goal levels is associated with greater well-being, avoidance motivation at the dispositional and goal levels is associated with lower well-being.

***Eudaimonic and hedonic motivation.*** The eudaimonic/hedonic distinction has been discussed in its traditional application—towards well-being. However, more recently this dichotomy has been applied to motivation, specifically as a distinction, both state and trait, of eudaimonic and hedonic motivation towards activities (Huta & Ryan, 2010).

***Motivational dispositions and well-being.*** At a general orientation or dispositional level, eudaimonic and hedonic motivation refer to the dispositional motives underlying activity and behaviours (Huta & Ryan, 2010). A hedonically-oriented individual seeks hedonic outcomes, such as pleasure and enjoyment. A eudaimonically-oriented individual seeks eudaimonic outcomes, such as personal growth and development. Hedonic and eudaimonic motives guide and direct actions and behaviours

regardless of whether or not eudaimonic or hedonic outcomes are actually experienced. At the trait level, eudaimonic and hedonic motives are positively associated, indicating that those who typically have greater eudaimonic motives underlying their behaviour also have greater hedonic motives.

Hedonic motives at the trait level have been positively associated to hedonic well-being indicators, including positive affect, life satisfaction, and carefreeness (Huta & Ryan, 2010). Hedonic motives at the trait level have also been positively associated to eudaimonic well-being indicators, such as meaning and vitality. Eudaimonic motives at the trait level have been positively associated to hedonic well-being indicators, such as positive affect and life satisfaction as well as eudaimonic well-being indicators, including elevating experience, subjective vitality, and meaning.

These results indicate that both eudaimonic and hedonic motives are related to eudaimonic and hedonic well-being, though the strength and frequency of these relations differs such that a hedonic motivational disposition is more related to hedonic well-being and a eudaimonic motivational disposition is more related to eudaimonic well-being (Huta & Ryan, 2010). Although eudaimonic and hedonic motives were related to indicators of eudaimonic and hedonic well-being in ways that differ, it is suggested that they are not entirely distinct and may overlap to facilitate maximum well-being. In support of this, Huta and Ryan (2010) found that individuals high in both eudaimonic and hedonic dispositional motives had the highest overall well-being, comprising both eudaimonic and hedonic components.

***Goal motivation and well-being.*** At a goal level, eudaimonic and hedonic motivation refer to the motives for engaging in goal-directed activities (Huta & Ryan, 2010). Whereas eudaimonic motives towards activities include seeking to develop the best in oneself and personal growth in particular activities, hedonic motives towards activities include seeking fun and relaxation in one's activities. Eudaimonic and hedonic goal-related motives are not mutually exclusive; consequently, individuals may be simultaneously motivated towards an activity by both eudaimonic and hedonic motives. However, as demonstrated in two studies conducted by Huta and Ryan (2010), eudaimonic and hedonic motives at the state level showed non-significant negative correlations. Therefore, though it is theoretically possible to simultaneously have both eudaimonic and hedonic motives toward a particular goal-related activity, research demonstrates the two are not strongly related at the goal level.

Hedonic motives at the goal/state level have been positively associated to hedonic well-being indicators, including positive affect and negatively associated to negative affect (Huta & Ryan, 2010). Additionally, hedonic motives at the goal level also are significantly positively associated with eudaimonic well-being indicators, such as vitality and elevating experience. Eudaimonic motives at the goal/state level show positive associations to eudaimonic well-being indicators, including meaning, vitality, and elevating experience, but no associations with indicators of hedonic well-being such as positive and negative affect.

Another study found that both eudaimonic and hedonic motives towards health-enhancing physical activity are significant, positive predictors of eudaimonic well-being



(Ferguson, Kowalski, Mack, Wilson, & Crocker, 2012). Given the relatively strong, positive correlation between eudaimonic and hedonic motives observed in this study towards this activity, a hierarchical regression was used to partial out eudaimonic motives. Ferguson et al. (2012) found that both eudaimonic and hedonic motives towards health-enhancing physical activity were unique predictors of eudaimonic well-being. Interestingly, frequency of involvement in and the intensity of the activity was not a significant predictor of eudaimonic well-being, indicating that it is the motives towards specific goals and activities, and not the goals or activities themselves that are associated with eudaimonic well-being.

*Associations between the disposition and goal levels.* Previous research has examined the relations between eudaimonic and hedonic motives at the dispositional and goal levels separately, but it has not yet identified associations between eudaimonic and hedonic dispositions, and eudaimonic and hedonic motives towards goals. Given the general patterns of association between motivational concepts at the dispositional and goal levels, it is thought that this pattern, though yet to be empirically demonstrated, will also be present between eudaimonic and hedonic dispositions, and eudaimonic and hedonic motives towards goals.

*Summary.* Eudaimonic and hedonic motives at both the dispositional and goal levels are associated with eudaimonic and hedonic well-being. However, hedonic motives at both levels are more related to hedonic well-being, though some significant relationships with eudaimonic well-being have been found. Further, eudaimonic motives are more related to eudaimonic well-being, though some significant relationships with

hedonic well-being have been found. Although eudaimonic and hedonic motives show different patterns of relations to well-being indicators, they may also overlap, particularly at the dispositional level, in ways associated with greater eudaimonic and hedonic well-being.

### **Associations between Motivational Orientations**

**Intrinsic/extrinsic and approach/avoidance motivation.** Intrinsic/extrinsic and approach/avoidance motivation have been linked together in previous research, typically with autonomous and approach motivation positively associated, and controlled and avoidance motivation positively correlated (Ryan & Deci, 1999). While it is true that most autonomous or intrinsic motivation tends to be proactive, aimed at working towards self-determined goals, and therefore approach oriented, there are clear exceptions. Thus, although positive relations would be expected between intrinsic and approach motivation, the two should not be viewed as entirely co-occurring. Similarly, Ryan and Deci (1999) also state that although controlled motivation and avoidance goals are related, it is entirely possible to have controlled regulation towards approach goals, therefore the two should not be exclusively linked.

At a goal level, extrinsic and avoidance motivation have been empirically linked. Elliot and Sheldon (1998) found that avoidance goals were a positive predictor of controlledness towards activities, such that individuals with more avoidance goals also had greater extrinsic reasons for engaging in their activities. Further, controlledness was significantly, positively correlated to neuroticism, a central component of an avoidance temperament. Together, these findings indicate that avoidance motivation at the

dispositional and goal levels may be related to extrinsic motivation at the goal/activity level.

Avoidance motivation has also been studied in relation to intrinsic motivation at the goal level. Elliot and McGregor (2001) found that avoidance goals were related to lower self-determination—the core of intrinsic motivation. It is suggested that avoidance goals lead to anxiety (related to an avoidance temperament) which results in diminished intrinsic motivation (Elliot & Church, 1997). Further evidence for a link between intrinsic and extrinsic motivation at the goal level and approach and avoidance motivation at the dispositional level comes from research examining the differential correlates of these types of goals. Whereas holding more intrinsic goals is negatively related to anxiety, holding more extrinsic goals is positively related to anxiety (Kasser & Ryan, 1993).

Overall, these findings demonstrate links between intrinsic/extrinsic and approach/avoidance motivation at the dispositional and goal levels. Further, they indicate that the concepts may be related to one another at various levels (i.e., avoidance motivation at the dispositional level and intrinsic motivation at the goal level). It is thought that this may be because of the close relations, discussed earlier, between dispositions and goals for each concept. For example, because an autonomous disposition predicts holding mostly intrinsic goals, and vice versa, the two tend to co-occur. Therefore, their respective relationships with approach and avoidance temperaments and goals may be similar.

**Intrinsic/extrinsic and eudaimonic/hedonic motivation.** There is both theoretical and empirical evidence demonstrating relations between intrinsic/extrinsic and

eudaimonic/hedonic motivation. In particular, research has focused on the link between intrinsic and eudaimonic motivation. Theoretically, intrinsic motivation and eudaimonic motivation at both the dispositional and goals levels have been defined in similar ways, emphasizing living authentically, pursuing valued outcomes, and self-determination. Further, two of the four criteria for eudaimonic living, pursuing intrinsic goals and behaving in autonomous (as opposed to controlled) ways, highlight intrinsic motivation at both levels (Ryan et al., 2008). The concept of eudaimonic living entails a process of personal growth and fulfillment, resulting in purpose and meaning and therefore it would be expected that this way of living is associated with eudaimonic motives.

Empirical research has also linked eudaimonic and intrinsic motivation.

Waterman et al. (2008) found that psychological experiences of eudaimonia—termed personal expressiveness—that facilitate eudaimonic living, are a component of intrinsic motivation. That is, these researchers found that psychological experiences of eudaimonia in a given activity are directly related to greater intrinsic motivation toward that activity. Thus, although research has not directly linked eudaimonic and intrinsic motivation at the dispositional and goal levels, they are theoretically similar and have been linked in other ways in previous research.

Although empirical research to establish links is needed, extrinsic and hedonic motivation at both the general disposition and goal levels may share some theoretical similarity. Whereas intrinsic and eudaimonic motivation involve internally fulfilling and meaningful processes, extrinsic and hedonic are entirely surface based—involving fun,

enjoyment, and external influence—unless coupled with their counterpart. Research is needed in order to evaluate these notions.

**Approach/avoidance and eudaimonic/hedonic motivation.** Direct links between eudaimonic/hedonic and approach/avoidance motivation have yet to be identified in the literature. However, theoretical descriptions indicate the two motivational dichotomies may be related. Both eudaimonic and hedonic motivation at the dispositional and goal levels are defined by activating behaviour and seeking outcomes of a specific nature (Huta & Ryan, 2010). This activation of behaviour is characteristic of an approach temperament, and seeking of specific outcomes is characteristic of approach goals (e.g., Elliot & Thrash, 2010). Thus, both eudaimonic and hedonic motives share conceptual similarity with approach temperaments and goals. Hedonic motives may also share some conceptual similarity with avoidance motivation. Conceptualized as a motive by Huta and Ryan (2010), hedonia involves a seeking to maximize benefits and minimize costs to the self. This minimization of cost may be related to sensitivity to, and avoidance of, punishment, each of which is characteristic of avoidance motivation at either the dispositional or goal level.

**Summary.** Previous empirical research and theoretical ideas have identified links between the pairs of motivational constructs of interest to this thesis (intrinsic/extrinsic, approach/avoidance, eudaimonic/hedonic). Further, of the several pairs that show associations, many have similar relationships with both types of well-being. In particular, the intrinsic, approach, and eudaimonic motivational constructs have strong empirical and theoretical associations with each other and both types of well-being. Yet whereas

previous research has examined these cross-construct relationships based on pairs of concepts (i.e., intrinsic and approach dispositions), the question remains as to how all six concepts (i.e., three pairs) relate to each other, and to both types of well-being when examined simultaneously. In particular, given the strong, positive associations among the intrinsic, approach, and eudaimonic constructs, and the strong positive associations each of these has with eudaimonic and hedonic well-being, the co-occurrence of these three motivational concepts may represent a *special* combination, such that when one possesses intrinsic, approach, *and* eudaimonic motivation, he or she will reap extra benefits with regards to their personal eudaimonic and hedonic well-being. This notion of a potential interaction among motivational concepts (in particular the special combination represented by approach, intrinsic, and eudaimonic motivation) will be explored in Study 2 in the present thesis.

### **Summary and Conclusion**

Both theoretical and empirical evidence highlight relationships between the three pairs of motivational concepts of intrinsic/extrinsic, approach/avoidance, and eudaimonic/hedonic. Although some of these relationships are more established than others in the literature, there remains evidence they may potentially be linked. More importantly, perhaps, the current lack of empirical integration exposes an important gap in the current literature. These constructs have yet to be studied together in a way that identifies individuals' motivations with respect to all six motivational concepts simultaneously, and the associations or patterns of co-occurrence across these concepts. Further, by examining these issues at two levels, it will be possible to identify how these

patterns are similar and different at the dispositional and goal level. Ultimately, studying motivation in this way will link theories and concepts that have not yet been studied in this manner, despite empirical and conceptual similarities.

Additionally, although clear links have been developed with each respective pair of constructs and well-being, it remains unclear how the combination of these constructs – when examined individually but simultaneously– is associated with eudaimonic and hedonic well-being. Therefore, it would be valuable and informative to study intrinsic/extrinsic, approach/avoidance, and eudaimonic/hedonic motivation together, at both the dispositional and goals levels and to examine the associations with eudaimonic and hedonic well-being. Doing so will provide a more complete picture of how the six motivational constructs relate to and predict both eudaimonic and hedonic well-being across individuals. Further, by examining motivation at two levels, it will be possible to identify how the patterns of associations with eudaimonic and hedonic well-being are similar and different at the dispositional and goal level.

Ultimately, studying motivation in this way will allow for assessing how motivational theories and concepts relate to well-being in a comprehensive manner. This approach will provide a more detailed and informative examination of motivation and well-being than what currently exists in the literature. This thesis will examine these ideas in two studies. Study one will identify the patterns of associations between motivational constructs and well-being both within and between levels of motivation (i.e., general disposition and goals). Study two will aim to experimentally manipulate motivation at the goals level and examine how such a manipulation impacts the

associations among motivational concepts as well as influences hedonic and eudaimonic well-being.



## **Study 1 – Measuring the Associations Among Motivational Concepts and Testing Predictive Relations with Two Forms of Well-Being**

In order to provide a detailed examination of the associations between motivation and well-being, initial research identifying such links is needed. As detailed above, several links within and between motivational concepts have been studied, as well as their associations with well-being (as summarized in Table 2). What the literature lacks, however, is an account of how all six of the motivational concepts relate to each other, and the patterns with which they predict both forms of well-being. Providing such an account will be theoretically valuable as it will bring together and reconcile the fragmented and partial explanations offered thus far regarding links between motivational concepts, and between motivation and well-being. Beyond this broad theoretical application, bringing together various motivational constructs at two levels and two conceptions of well-being will also have practical applications, such as informing how the framing of motivation and goals contribute to well-being, particularly in ways that promote high eudaimonic and hedonic well-being.

### **Research Goals, Questions, and Hypotheses**

There were two main goals for Study 1. The first goal was to evaluate the associations among motivational tendencies at the general disposition and goal levels. This study aimed to identify the ways in which three pairs of motivational constructs are related to each other, both within and between the disposition and goal levels. The corresponding research question examined was: How do motive and goal orientations relate to each other? It was hypothesized that there would be specific patterns of

associations among motivation concepts at both the dispositional and goal levels. In particular, it was expected that intrinsic, approach, and eudaimonic motivation would be strongly and positively interrelated (Hypothesis 1A); and that extrinsic, avoidance, and hedonic motivation would be highly positively interrelated (Hypothesis 1B). These relationships were expected within both the general disposition and the goal levels (Hypothesis 1C). Further, high correlations were also expected between corresponding motivational concepts across dispositional and goal levels (e.g., an intrinsic disposition is expected to correlate highly and positively with intrinsic goals; Hypothesis 1D).

The second goal of Study 1 pertained to how the various motivational tendencies relate to eudaimonic and hedonic well-being. The general research question was: How do motivational constructs from both the general disposition and goal levels predict each form of well-being? It was hypothesized that greater hedonic well-being would be predicted by greater intrinsic, lower extrinsic, greater approach, lower avoidance, greater eudaimonic, and greater hedonic motivation (Hypothesis 2A). Further, I expected that greater eudaimonic well-being would be predicted by greater intrinsic, lower extrinsic, greater approach, less avoidance, greater eudaimonic, and greater hedonic motivation (Hypothesis 2B). These general patterns were expected to emerge at both the dispositional and goal levels (Hypothesis 2C). Furthermore, based jointly on previous research examining associations among the motivation concepts and research examining associations between these concepts and each type of well-being, it was predicted that comparing between predictors of hedonic and eudaimonic well-being, greater intrinsic, greater approach, and greater eudaimonic motivation would be more strongly predictive

of eudaimonic than hedonic well-being (Hypothesis 2D), whereas lesser extrinsic, lesser avoidance, and greater hedonic motivation would be more strongly predictive of hedonic than eudaimonic well-being (Hypothesis 2E).

## **Method**

**Participants.** Participants were 334 Brock University undergraduate students ( $M$  age = 19.14,  $SD$  = 2.22; 87% female) who voluntarily participated in the study in return for course credit. Of this full sample, nine participants were removed, as detailed below. The analysis sample comprised 325 participants ( $M$  age = 19.10,  $SD$  = 2.18; 87% female).

**Procedure.** Participants signed up online for a timeslot, with a maximum of 12 participants per session. Upon arriving at the testing room, participants were given a consent form and asked to carefully read over, sign, and return it to the research assistant. Once consent forms were returned, participants were given a questionnaire booklet to be completed within a maximum of one hour. Following demographic questions, questionnaires were presented measuring motivation at the disposition level in the following order: intrinsic and extrinsic disposition, approach and avoidance disposition, eudaimonic and hedonic disposition. Next participants completed measures of motivation at the goal level in the following order: approach and avoidance goals, intrinsic and extrinsic goals, eudaimonic and hedonic goals. The last set of measures assessed hedonic (positive and negative affect, life satisfaction) and eudaimonic (psychological well-being, and eudaimonic functioning) well-being. After completing these measures, participants placed their booklets in a closed drop-box, emphasizing confidentiality. Lastly, participants were provided with a written debriefing, outlining the study goals and

objectives, as well as researcher contact information. This procedure was granted clearance (as a modification on an existing approved study) by the Brock University Research Ethics Board (see Appendix 1).

### **Measures.**

***Intrinsic and extrinsic disposition.*** The *General Causality Orientations Scale* (GCOS; Deci & Ryan, 1985b) was used to measure participants' dispositional orientations with respect to three motivational styles: autonomy, control, and impersonal (see Appendix 2). An individual with an autonomous orientation is generally intrinsically motivated whereas an individual with a controlled orientation is generally extrinsically motivated. Individuals scoring high in the impersonal orientation typically lack a sense of control and integration, and are amotivated. The scale consists of 17 vignettes assessing motivation in the achievement and interpersonal domains, each followed by three statements, one corresponding to each of the three orientations (motivational dispositions). Participants were asked how likely it is—if they were in the scenario presented in the vignette—that they would respond in each of the three ways. Responses were indicated for each of the three orientation styles on a 7-point scale (1 = *very unlikely* and 7 = *very likely*). Average scores were computed for the autonomous and controlled subscales (Cronbach's  $\alpha = .77$  and  $.76$ , respectively), such that higher scores indicate more of a given orientation. Scores on the impersonal (amotivation) ratings were not examined in this study.

***Approach and avoidance disposition.*** The *Approach-Avoidance Temperament Questionnaire* (ATQ; Elliot & Thrash, 2010) measured the degree to which an individual

displays an approach or avoidance temperament (see Appendix 3). These temperaments were assessed using the 12-item ATQ with six items for each respective type of temperament. Participants indicated their answers on a Likert scale (1 = *strongly disagree* and 7 = *strongly agree*); responses were averaged such that higher scores indicated greater approach and avoidance temperaments, respectively (Cronbach's  $\alpha = .77$  and  $.80$ ).

***Eudaimonic and hedonic disposition.*** The *Hedonic and Eudaimonic Motives for Activities* (HEMA; Huta & Ryan, 2010) scale assessed the extent to which individuals have a dispositional orientation to engage in their activities with eudaimonic or hedonic aims (see Appendix 4). The stem question of the trait version was altered for the purposes of this study, asking participants “*In general, how important is each of the following to you in your life?*”. The original nine item scale contains four motives related to eudaimonia (i.e., seeking to do what you believe in and seeking to use the best in yourself), and five items related to hedonia (i.e., seeking relaxation and seeking fun). Six additional items were added to the scale for the purposes of this study (i.e., seeking happiness and seeking a life of purpose) in order to more fully represent eudaimonic and hedonic elements. Each of these items was rated on a 7-point scale (1 = *not at all* and 7 = *very much*). Ratings were averaged, such that higher scores indicated greater orientation towards eudaimonic and hedonic motives, respectively (Cronbach's  $\alpha = .80$  and  $.74$ ).

***Approach and avoidance goals.*** Following previous research by Elliot and colleagues (i.e., Elliot et. al, 1997; Elliot & Sheldon, 1998; Elliot & Church, 2002), approach and avoidance goals were measured by asking participants to list up to eight goals they are currently pursuing (see Appendix 5). Responses were coded as either

approach or avoidance in goal content by two independent raters, based on guidelines presented in Elliot and Friedman's (2007) instructions. The total number of approach and avoidance goals for each participant were tabulated, such that higher tallies indicated more approach and avoidance goals, respectively. Spearman correlations between coder ratings were significant and positive for both approach ( $r = .80$ ) and avoidance ( $r = .78$ ) goals.

***Intrinsic and extrinsic goals.*** The *Aspirations Index* was used to assess the intrinsic and extrinsic life goals of individuals (Kasser & Ryan, 1993; 1996; see Appendix 6). There were a total of seven categories, each with five goals: community contribution, personal growth, and relationships comprise the intrinsic life goal factors; wealth, image, and fame comprise the extrinsic life goal factor. The seventh category, health related life goals, did not fit into either of the categories and was omitted from analysis in this study. For each of the 35 life goals presented, participants were asked: "How important is this to you?". Responses were indicated by ratings on a Likert scale (1 = *not at all* and 7 = *very*). Ratings were averaged, such that higher scores represented greater importance placed on intrinsic or extrinsic goals, respectively (Cronbach's  $\alpha = .83$  and .91).

***Eudaimonic and hedonic goals.*** The *Hedonic and Eudaimonic Motives for Activities* (HEMA; Huta & Ryan, 2010; see Appendix 7) scale assessed the extent to which individuals were currently engaging in their activities with eudaimonic or hedonic aims. The stem question of the state version reads, "*During the past week*, to what degree did you approach your activities with each of the following intentions, whether or not you

actually achieved your aim?”. The original nine item scale contains four activity-related motives related to eudaimonia (i.e., seeking to do what you believe in and seeking to use the best in yourself), and five items related to hedonia (i.e., seeking relaxation and seeking fun). Six additional items were added to the scale for the purposes of this study (i.e., seeking happiness and seeking a life of purpose) in order to more fully represent eudaimonic and hedonic elements. Each of these items are rated on a 7-point scale (1 = *not at all* and 7 = *very much*). Ratings were averaged, such that higher scores indicated greater eudaimonic or hedonic goal-related motives, respectively (Cronbach’s  $\alpha = .87$  and  $.81$ ).

***Hedonic well-being.*** The *Scale of Positive and Negative Experience* (SPANE; Diener et al., 2010) was used to measure the frequency of an individual’s positive and negative affective experiences (see Appendix 8). The scale contains six items related to positive feelings and six items related to negative feelings. The 12-item scale instructs participants to report how much they have felt a particular feeling over the past four weeks. Answers are indicated by a self-rating on a 5-point Likert scale (1 = *very rarely or never* and 5 = *very often or always*). Ratings were averaged, such that higher scores indicated greater frequency of positive and negative affective experiences, respectively (Cronbach’s  $\alpha = .83$  and  $.83$ ). The *Satisfaction with Life Scale* (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) was used to assess overall life satisfaction (see Appendix 9). Participants are asked to indicate the extent to which they agree with five statements (i.e., “In most ways my life is close to my ideal”) on a 7-point Likert scale (1 = *strongly disagree* and 7 = *strongly agree*). Ratings were averaged across items such that higher

scores indicated greater satisfaction with life (Cronbach's  $\alpha = .86$ ). A composite hedonic well-being score was computed by standardizing the life satisfaction, positive affect, and negative affect (reverse-scored) values, then averaging across the three measures; higher scores indicated higher hedonic well-being.

***Eudaimonic well-being.*** The 18-item *Scales of Psychological Well-Being* (PWB; Ryff 1989; Ryff & Keyes, 1995) assessed six dimensions of psychological well-being: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance (see Appendix 10). Three items assessing each of the six categories were interspersed. Participants are asked to respond to each item on a Likert scale (1 = *strongly disagree* and 6 = *strongly agree*) with eight of the items reverse-coded. Ratings were averaged across items, such that higher scores represented greater psychological well-being (Cronbach's  $\alpha = .78$ ). The *Questionnaire for Eudaimonic Well-Being* (QEWB; Waterman et al., 2010) was also used to assess overall eudaimonic well-being (see Appendix 11). Participants were asked to respond to 21 items assessing six categories of eudaimonia: self-discovery, development of one's potential, purpose and meaning, effort in pursuit of excellence, intense engagement, and enjoyment of personally expressive activities. Responses were indicated on a 5-point Likert scale (0 = *strongly disagree* and 4 = *strongly agree*). Ratings were averaged (seven items were reversed-scored) such that higher scores indicated greater eudaimonic well-being (Cronbach's  $\alpha = .78$ ). A composite eudaimonic well-being variable was computed by standardizing scores, then averaging across the two measures; higher scores indicated higher eudaimonic well-being.



## Results

### Preliminary analysis.

*Distributions and outliers.* Descriptive statistics for the primary study variables are shown in Table 3. Correlations among these variables are shown in Table 4.

Composite scores were calculated only for cases with a minimum of 50% of the data for each respective target variable. Further, all analyses were based on individuals with data for all 17 variables of interest; nine cases (2.7% of the full sample) were dropped from analysis on the basis of incomplete data.

Examination of the distributions, skewness, and kurtosis of all variables revealed two non-normal variables: approach and avoidance goals. This is consistent with previous research finding that individuals have a disproportionate amount of approach, compared to avoidance, goals, and that this ratio may be even more extreme in young adults—the population of interest in the current study (Elliot & Church, 2002; Elliot & Sheldon, 1997). There were a small number of univariate outliers across analysis variables as indicated by z-scores  $> +$  or  $< -3$ . Additionally, there were a small number of multivariate outliers in the data, indicated by standardized residuals  $> +3$  or  $< -3$ , and centered leverage scores larger than .06 (for regressions with six predictors) and .11 (for regressions with 12 predictors). However, upon further analysis, no influential multivariate outliers were identified in the data set, as indicated by Cook's Distance values  $< 1$  for all participants in each of the multiple regression models described below. Additional assumptions for regression analyses were met, including: normality of residuals, independence of residuals, and homoscedasticity.

Table 3

*Descriptive Statistics for Study Variables*

Level Construct	<i>M</i>	<i>SD</i>	Scale min.	Scale max.	Observed min.	Observed max.	Skew	Kurt
Disposition								
Autonomy	5.63	.55	1.00	7.00	4.12	7.00	-.18	-.20
Control	4.07	.70	1.00	7.00	2.24	6.50	.11	-.00
Approach	5.38	.81	1.00	7.00	2.00	7.00	-.52	.74
Avoidance	4.38	1.20	1.00	7.00	1.00	7.00	-.07	-.44
Eudaimonic	6.01	.69	1.00	7.00	3.00	7.00	-.83	1.15
Hedonic	5.84	.64	1.00	7.00	3.88	7.00	-.37	.00
Goal								
Intrinsic	6.22	.50	1.00	7.00	4.00	7.00	-.69	.60
Extrinsic	3.82	1.00	1.00	7.00	1.40	6.67	.08	-.15
Approach	7.51	1.01	0.00	8.00	.00	8.00	-3.45	16.76
Avoidance	.51	.81	0.00	8.00	.00	4.00	1.83	3.45
Eudaimonic	4.89	1.18	1.00	7.00	1.43	7.00	-.30	-.42
Hedonic	5.14	.97	1.00	7.00	1.50	7.00	-.55	.95
Well-Being								
Eudaimonic	0.00	.91	--	--	-3.39	2.77	-.46	1.29
Hedonic	0.00	.83	--	--	-3.03	2.23	-.40	.44

*Note.* *N* = 325.

Table 4

*Correlations Among Dispositional and Goal-Level Motivational Concepts and Well-Being*

Level Construct	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>Disposition</b>														
1. Autonomy	--													
2. Control	.11*	--												
3. Approach	.37*	.25*	--											
4. Avoidance	-.03	.01	-.14*	--										
5. Eudaimonic	.37*	.14*	.47*	-.08	--									
6. Hedonic	.24*	.24*	.29*	.09	.49*	--								
<b>Goal</b>														
7. Intrinsic	.43*	.03	.32*	.10	.55*	.38*	--							
8. Extrinsic	-.10	.47*	.15*	.06	.05	.24*	.09	--						
9. Approach	.05	.08	.11	-.00	.01	.01	-.03	-.02	--					
10. Avoidance	-.05	-.01	-.04	.05	-.05	.05	-.06	.07	-.31*	--				
11. Eudaimonic	.23*	.14*	.35*	-.14*	.43*	.19*	.41*	.13*	.01	-.19*	--			
12. Hedonic	.06	.21*	.23*	-.05	.20*	.45*	.22*	.19*	-.19*	-.01	.49*	--		
<b>Well-being</b>														
13. Eudaimonic	.38*	.03	.56*	-.37*	.48*	.16*	.32*	-.07	.09	-.11*	.41*	.11*	--	
14. Hedonic	.12*	-.01	.38*	-.53*	.17*	.04	.04	.04	.14*	-.11	.26*	.19*	.54*	--

Note.  $N = 325$ . \* $p < .05$ .

**Exploratory factor analysis of well-being indicators.** An exploratory factor analysis was conducted on the five well-being measures (see Table 5 for means, standard deviations, and correlations) in order to confirm the variables used to represent each type of well-being (eudaimonic and hedonic) were empirically distinct groupings, as anticipated. Using principal axis factoring, the analysis produced one large factor (eigenvalue greater than 1.00). As shown in Table 6, Factor 1 has strong positive loadings from the SWLS, PA, QEWB, and PWB measures, and a strong negative loading from the NA measure. However, this analysis also revealed a sizeable residual correlation between the two EWB indicators.

Table 5

*Descriptive Statistics and Correlations Among Well-Being Variables*

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5
Hedonic well-being							
1. SWLS	4.33	1.19	--				
2. PA	3.77	.57	.55*	--			
3. NA	2.65	.73	-.47*	-.59*	--		
Eudaimonic well-being							
4. PWB	4.47	.56	.47*	.50*	-.45*	--	
5. QEWB	2.65	.43	.35*	.39*	-.31*	.64*	--

*Note.*  $N = 325$ . SWLS = Satisfaction With Life Scale; PA = Positive affect subscale (from the Scale of Positive and Negative Experience); NA = Negative affect subscale (from the Scale of Positive and Negative Experience); PWB = Scales for Psychological Well-Being; QEWB = Questionnaire for Eudaimonic Well-Being. \* $p < .05$ .

Thus, a two factor solution was also examined. As shown in Table 6, following oblique rotation, Factor 1 had strong positive loadings from the SWLS and PA measures, and a strong negative loading from the NA measure, in combination with weak loadings

from two eudaimonic well-being measures. Factor 2 had strong positive loadings from the QEWB and PWB measures, along with weak loadings from each of the three hedonic well-being measures. The estimated correlation between factors was .49. Based on these results, in all subsequent analyses well-being was assessed as two separate concepts, using standardized composite scores consisting of the measures representing each variable described above (i.e., SWLS, PA, and reverse-scored NA for subjective well-being; PWB and QEWB for eudaimonic well-being).

Table 6

*Results from Exploratory Factor Analyses of Well-Being Variables*

Measure	One factor extracted	Two factors extracted	
	Factor 1	Factor 1	Factor 2
Hedonic			
SWLS	.66	.77	.06
PA	.75	.83	.06
NA	-.66	-.88	.08
Eudaimonic			
QEWB	.60	-.10	.98
PWB	.76	.22	.76

*Note.*  $N = 325$ . SWLS = Satisfaction With Life Scale; PA = Positive affect subscale (Scale of Positive and Negative Experience); NA = Negative affect subscale (from the Scale of Positive and Negative Experience); PWB = Scales for Psychological Well-Being; QEWB = Questionnaire for Eudaimonic Well-Being. Standardized factor loadings after oblique rotation are shown.

**Research goal 1: Assessing associations among motivational constructs.** The first goal of this study was to evaluate the associations among motivational tendencies at the general disposition and goal levels, and identify the ways in which the three pairs of motivational constructs are related to each other, both within and between the disposition and goal levels. It was hypothesized that intrinsic, approach, and eudaimonic motivation

would be strongly and positively interrelated (Hypothesis 1A); and that extrinsic, avoidance, and hedonic motivation would be strongly and positively interrelated (Hypothesis 1B). These relationships were expected to occur within both the general disposition and the goal levels (Hypothesis 1C). Lastly, strong and positive correlations were expected between corresponding motivational concepts across dispositional and goal levels (Hypothesis 1D).

To assess Hypotheses 1A to 1C, bivariate correlations were first examined. As a further test of these hypotheses, within each level (disposition, goals) an exploratory factor analysis (principal axis factoring, orthogonal rotation; Field, 2009; Thompson, 2004) was conducted on all six motivation concepts in order to evaluate whether the two hypothesized groupings of concepts (i.e., intrinsic, approach, eudaimonic vs. extrinsic, avoidance, hedonic) were empirically distinct (as would be revealed in two separate factors), or whether there were instead different patterns of underlying commonalities among the various motivation concepts. To assess Hypothesis 1D, bivariate correlations between corresponding motivational concepts were examined across disposition and goal levels; an exploratory factor analysis using all 12 motivational concepts (six concepts for each level) was also estimated.

***Disposition-level motivation.*** With respect to associations among intrinsic (autonomous), approach, and eudaimonic concepts, as shown in Table 4, moderate and positive correlations were found between each pair of concepts. With respect to associations among extrinsic (controlled), avoidance, and hedonic concepts, only the correlation between controlled and hedonic orientations was positive and significant; the remaining two correlations involving avoidance orientation were non-significant.

Furthermore, results from the exploratory factor analysis using principal axis factoring revealed two large factors (eigenvalues greater than 1.00). As shown in Table 7, following orthogonal rotation, Factor 1 had strong positive loadings from autonomy, approach, eudaimonic, and hedonic concepts; Factor 2 had moderate loadings from approach (positive) and hedonic (negative). Results were similar when an oblique rotation was used instead of an orthogonal rotation. Together, these findings provide full support for Hypothesis 1A and minimal support for Hypothesis 1B.

***Goal-level motivation.*** With respect to associations among intrinsic, approach, and eudaimonic concepts, as shown in Table 4, only the correlation between intrinsic and eudaimonic concepts was positive and significant; the remaining two correlations involving approach goals were non-significant. With respect to associations among extrinsic, avoidance, and hedonic concepts, only the correlation between extrinsic and hedonic concepts was positive and significant; the two remaining correlations involving avoidance goals were non-significant.

Results from the exploratory factor analysis using principal axis factoring revealed two large factors (eigenvalues greater than 1.00). As shown in Table 7, following orthogonal rotation, Factor 1 had strong positive loadings from intrinsic, eudaimonic, and hedonic concepts; Factor 2 had strong loadings from approach (negative) and avoidance (positive). Results were similar when an oblique rotation was used instead of an orthogonal rotation. Together, these findings provide minimal support for Hypothesis 1A and Hypothesis 1B.

Table 7

*Results from Exploratory Factor Analyses of Motivational Concepts Within and Across Dispositional and Goal Levels*

Level Variables	Within levels analysis		Combined levels analysis				
	Factor 1	Factor 2	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Disposition							
Autonomy	.44	.23	.61	-.05	-.01	-.05	.07
Control	.29	.03	.17	.04	.79	-.01	.07
Approach	.61	.47	.55	.11	.25	-.14	.09
Avoidance	-.02	-.25	-.04	-.03	.00	.23	-.04
Eudaimonic	.68	.16	.74	.21	.05	-.00	.00
Hedonic	.80	-.41	.47	.48	.23	.57	.00
Goal							
Intrinsic	.44	-.03	.65	.23	-.04	.02	-.03
Extrinsic	.21	.11	-.01	.18	.58	.06	-.08
Approach	-.05	-.41	.03	-.06	.06	.03	.64
Avoidance	-.08	.75	-.04	-.07	.07	.15	-.50
Eudaimonic	.56	.04	.38	.64	.07	-.51	.08
Hedonic	.88	-.15	.13	.66	.20	.01	.00
Variance Explained			23.54%	8.74%	6.48%	5.46%	4.07%

*Note.*  $N = 325$ . Standardized factor loadings are shown after orthogonal rotation.



*Combining disposition-level and goal-level motivation.* With respect to correlations between corresponding concepts across disposition and goal levels, as shown in Table 4, positive associations were found for intrinsic, extrinsic, eudaimonic, and hedonic concepts, but not for approach and avoidance. These findings provide partial support for Hypothesis 1D.

Results from the exploratory factor analysis using principal axis factoring revealed five large factors (eigenvalues greater than 1.00). See Table 7 for factor loadings, and explained variances by factor. Following orthogonal rotation, Factor 1 had moderate to strong positive loadings from autonomy, approach, eudaimonic, and hedonic dispositions, as well as intrinsic and eudaimonic goals; Factor 2 had a moderate positive loading from hedonic disposition, and strong positive loadings from hedonic and eudaimonic goals; Factor 3 had strong positive loadings from control disposition and extrinsic goals, and a moderate positive loading from approach disposition; Factor 4 had strong loadings from hedonic disposition (positive) and eudaimonic goals (negative), and a moderate positive loading from eudaimonic orientation; and Factor 5 had strong loadings from approach goals (positive) and avoidance goals (negative). Together, these findings provide minimal support for Hypothesis 1C and partial support for Hypothesis 1D.

**Research goal 2: Assessing associations between motivational constructs and well-being.** The second goal of this study was to examine how the various motivational dispositions and goals relate to eudaimonic and hedonic well-being. It was hypothesized that greater hedonic well-being would be predicted by greater intrinsic, lower extrinsic, greater approach, lower avoidance, greater eudaimonic, and greater hedonic motivation

(Hypothesis 2A), and that greater eudaimonic well-being would be predicted by greater intrinsic, lower extrinsic, greater approach, less avoidance, greater eudaimonic, and greater hedonic motivation (Hypothesis 2B). These general patterns were expected to emerge at both the dispositional and goal levels (Hypothesis 2C). Lastly, it was predicted that when comparing the disposition-level and goal-level motivation predictors across outcomes, greater intrinsic, greater approach, and greater eudaimonic motivation would be more strongly predictive of eudaimonic than hedonic well-being (Hypothesis 2D), whereas lesser extrinsic, lesser avoidance, and greater hedonic motivation would be more strongly predictive of hedonic than eudaimonic well-being (Hypothesis 2E).

To assess Hypothesis 2A, 2B, and 2C, six regression analyses were conducted in which eudaimonic and hedonic well-being were each regressed simultaneously onto the six motivational concepts at the disposition level (see Table 8), the six motivational concepts at the goals level (see Table 9), and all twelve motivational concepts from both levels (see Table 10). To evaluate Hypothesis 2D and 2E, I compared corresponding regression coefficients from the regression model incorporating all 12 dispositional and goal-level predictors using the approach outlined by Cohen, Cohen, Aiken, and West (2003, pp. 46-47; see Table 10).

***Motivational dispositions predicting well-being.*** As shown in Table 8, the six dispositional motivational constructs explained 39% of the variance in hedonic well-being. Of the individual predictors, three accounted for significant unique variability: control, approach, and avoidance. Greater hedonic well-being was predicted by lower control orientation, higher approach disposition, and lower avoidance dispositions. These findings provide partial support for Hypothesis 2A.

Table 8

*Dispositional Motivation Predicting Well-Being*

Predictors	Type of Well-Being			
	Hedonic		Eudaimonic	
	b	$\beta$	b	$\beta$
Autonomy	-.02	-.01	.28*	.16
Control	-.13*	-.09	-.14*	-.10
Approach	.43*	.34	.47*	.38
Avoidance	-.41*	-.49	-.24*	-.29
Eudaimonic	-.04	-.03	.38*	.26
Hedonic	.03	.02	-.09	-.06
Total $R^2$	.39*		.49*	

*Note.*  $N = 325$ . Unstandardized (b) and standardized ( $\beta$ ) regression coefficients are presented.

\* $p < .05$ .

Table 9

*Goal Motivation Predicting Well-Being*

Predictors	Type of Well-Being			
	Hedonic		Eudaimonic	
	b	$\beta$	b	$\beta$
Intrinsic	-.14	-.07	.37*	.19
Extrinsic	.00	.00	-.11*	-.11
Approach	.13*	.13	.10	.10
Avoidance	-.04	-.03	.02	.01
Eudaimonic	.20*	.23	.34*	.41
Hedonic	.10	.10	-.11	-.11
Total $R^2$	.10*		.23*	

*Note.*  $N = 325$ . Unstandardized (b) and standardized ( $\beta$ ) regression coefficients are presented.

\* $p < .05$ .

Table 10

*Disposition-Level and Goal-Level Motivation Predicting Well-Being*

Level Predictor	Type of Well-Being				Difference between regression coefficients
	Hedonic		Eudaimonic		
	b	β	b	β	
Disposition					
Autonomy	.04	.02	.20*	.11	ns
Control	-.22*	-.15	-.09	-.07	ns
Approach	.37*	.30	.45*	.36	ns
Avoidance	-.39*	-.47	-.23*	-.28	b1 < b2
Eudaimonic	-.01	-.01	.24*	.16	b1 < b2
Hedonic	-.05	-.04	.02	.01	ns
Goal					
Intrinsic	-.10	-.05	.07	.04	ns
Extrinsic	.09	.09	-.08	-.08	b1 > b2
Approach	.11*	.11	.04	.05	ns
Avoidance	-.04	-.03	-.01	-.01	ns
Eudaimonic	.05	.06	.18*	.21	ns
Hedonic	.12*	.12	-.12*	-.11	b1 > b2
Total $R^2$		.42*		.52*	

*Note.*  $N = 325$ . Unstandardized (b) and standardized ( $\beta$ ) regression coefficients are presented. b1 and b2 refer to corresponding regression coefficients predicting hedonic and eudaimonic well-being, respectively. “<” and “>” indicate significant differences between corresponding regression coefficients; ns = non-significant difference between corresponding regression coefficients. \* $p < .05$ .

The six dispositional motivation constructs also explained 49% of the variance in eudaimonic well-being. Of the individual predictors, five accounted for significant unique variability: autonomy, control, approach, avoidance, and eudaimonic. Greater eudaimonic well-being was predicted by higher levels of autonomy, approach, and eudaimonic dispositions, as well as lower control and avoidance dispositions. These findings provide near-complete support for Hypothesis 2B.

***Goal-level motivation predicting well-being.*** As shown in Table 9, the six goal-level motivational constructs explained 10% of the variance in hedonic well-being. Of the individual predictors, two accounted for significant unique variability: approach and eudaimonic. Greater hedonic well-being was predicted by higher levels of approach and eudaimonic goals. These results provide no support for Hypothesis 2A.

The six goal motivation constructs explained 23% of the variance in eudaimonic well-being. Of the individual predictors, three accounted for significant unique variability: intrinsic, extrinsic, and eudaimonic. Greater eudaimonic well-being was predicted by higher levels of intrinsic and eudaimonic goals, as well as lower extrinsic goals. These results provide partial support for Hypothesis 2B.

***Disposition-level and goal-level motivation together predicting well-being.*** As shown in Table 10, when assessed jointly the 12 disposition-level and goal-level motivational constructs explained 42% of the variance in hedonic well-being. Of the individual predictors, five accounted for significant unique variability: autonomy, approach, and avoidance dispositions, as well as approach and hedonic goals. Greater hedonic well-being was predicted by higher levels of approach disposition, higher approach and hedonic goals, as well as lower controlled and avoidance dispositions. These findings provide partial support for Hypothesis 2A. In addition, the only predictor accounting for unique variability in hedonic well-being at *both* dispositional and goals levels was approach motivation. This finding provides minimal support for Hypothesis 2C.

The 12 disposition-level and goal-level motivation constructs explained 52% of the variance in eudaimonic well-being. Of the individual predictors, six accounted for

significant unique variability: autonomy, approach, avoidance, and eudaimonic dispositions, as well as eudaimonic and hedonic goals. Greater eudaimonic well-being was predicted by higher levels of autonomy, approach, and eudaimonic dispositions; higher eudaimonic goals; and lower avoidance dispositions and lower hedonic goals. These findings provide partial support for Hypothesis 2B. In addition, the only predictor accounting for unique variability in eudaimonic well-being at both disposition and goals levels was eudaimonic motivation. This finding provides minimal support for Hypothesis 2C.

***Differences in predictive associations between disposition-level and goal-level motivational constructs.*** The final column in Table 10 indicates results from testing the difference between corresponding (unstandardized) regression coefficients across types of well-being. As shown, avoidance dispositions, eudaimonic dispositions, extrinsic goals, and hedonic goals had significantly different associations with eudaimonic than with hedonic well-being. Specifically, lower avoidance disposition was more strongly predictive of greater hedonic than greater eudaimonic well-being; stronger eudaimonic orientation was more strongly predictive of eudaimonic than hedonic well-being; stronger hedonic goals were more strongly predictive of greater hedonic well-being than they were of lower eudaimonic well-being. Note also that although the regression coefficients for the effect of extrinsic goals on both types of well-being were each non-significant, these coefficients were in the opposite direction of each other and did differ significantly across type of well-being. These findings provide minimal support for Hypothesis 2D (which was concerned with the differential predictive effects for intrinsic, approach, and eudaimonic concepts on each type of well-being) and partial support for Hypothesis 2E

(which pertained to the differential effects of extrinsic, avoidance, and hedonic concepts on each type of well-being).

## **Discussion**

**Research goal 1: Assessing associations among motivational constructs.** The first goal of this study was to evaluate the associations among motivational tendencies at the disposition and goal levels, and identify the ways in which the three pairs of motivational constructs (intrinsic/extrinsic, approach/avoidance, eudaimonic/hedonic) are related to each other, both within and between levels. It was expected that intrinsic, approach, and eudaimonic motivation would be strongly and positively interrelated (Hypothesis 1A), and that extrinsic, avoidance, and hedonic motivation would be strongly and positively interrelated (Hypothesis 1B). Further, these predicted patterns of association were expected to occur at both the disposition and goal levels of analysis (Hypothesis 1C). Lastly, strong and positive correlations were expected between corresponding motivational concepts across the disposition and goal levels (Hypothesis 1D). The pattern of results revealed and implications of these findings at each level are discussed below.

### ***Disposition-level motivation.***

*Autonomy, approach, and eudaimonic orientations.* As predicted, I found moderate positive correlations between intrinsic (assessed as an autonomous orientation), approach, and eudaimonic motivation at the dispositional level, providing full support for Hypothesis 1A. Previous literature has identified links between autonomous and approach motivation (Ryan & Deci, 1999), and autonomous and eudaimonic motivation (Ryan et al., 2008; Waterman et al., 2008). My results are consistent with these findings, and

additionally revealed a positive association between approach and eudaimonic motivation, providing the first empirical evidence that these two constructs are linked. Thus, this study is the first to identify positive associations between each pair of these constructs within the same sample. Such results indicate that at the dispositional level, autonomous, approach, and eudaimonic motivation may be jointly related, co-occurring orientations which guide individuals' actions, behaviours, and choices.

Beyond these two-way pairings, results from an exploratory factor analysis reveal that autonomous, approach, and eudaimonic motivation also load onto the same factor, again providing full support for Hypothesis 1A. This finding is consistent with my proposal that together these three motivational orientations reflect a *special* motivational combination which may produce stronger associations with constructs with which they are individually associated. Alternatively, given that autonomous, approach, and eudaimonic motivation are positively related and load onto the same factor, these three motivational orientations might simply be variations of the same underlying or generalized orientation. These are important issues to address, both at a theoretical level (i.e. integrating motivational constructs into more comprehensive theories), and an empirical level (i.e. assessing the correlates and effects of this combination). Thus, additional information is needed in order to ascertain whether these orientations are redundant, or in fact convey unique information, for example, in predicting other variables of interest including well-being, as addressed below with respect to Research Goal 2.

*Controlled, avoidance, and hedonic orientations.* The second group of motivational constructs I expected to be related, controlled, avoidance, and hedonic



motivation (Hypothesis 1B), received less support in my results. My results showed a positive association between controlled and hedonic dispositions, consistent with the apparent conceptual similarities between these concepts (e.g., Deci & Ryan, 2008; Huta & Ryan, 2010). This is, however, the first *empirical* evidence that these concepts are in fact related. Adding some evidence to this association, controlled motivation also loaded onto the same factor, albeit quite weakly, as hedonic motivation. These results highlight a shortcoming of previous empirical and theoretical work (e.g., Ryan et al., 2008; Waterman et al., 2008), which has focused exclusively on the links between autonomous and eudaimonic motivation. My results indicate that their counterparts, controlled and hedonic motivation, may also be similarly related, highlighting the need for conceptual integration. In particular, individuals who tend to feel constrained or governed by external pressures and forces also have a greater predisposition toward seeking enjoyment and satisfaction throughout their lives.

Contrary to Hypothesis 1B, neither controlled nor hedonic dispositions were correlated with avoidance motivation. Additionally, controlled and avoidance dispositions loaded onto separate factors of an EFA. Such findings are somewhat surprising, given that previous research has found controlled motivation to be positively related to neuroticism and anxiety (Elliot & Church, 1997; Kasser & Ryan, 1993), as well as negative affect (Gagne, Ryan, & Bargmann, 2003), all of which are central components of an avoidance temperament. However, other research has indicated that although they have some similar elements, controlled and avoidance motivation are not exclusively linked with one another, and may co-occur with the other concept within each of their respective pairs (i.e., controlled with approach, avoidance with intrinsic; Ryan &

Deci, 1999). Indeed, in the present study controlled motivation loaded (weakly) onto the same factor as approach motivation, and autonomous and avoidance motivation loaded (weakly and in opposite directions) onto a separate factor in my EFA. It appears, therefore, that more research is needed to better understand how and when controlled and avoidance orientations do and do not relate or co-occur.

It is also surprising that avoidance and hedonic dispositions were not significantly related, given that the classic definitions underlying the concept of hedonic motivation can be understood, in part, as *avoiding* costs to the self (e.g., negative affective experiences; Huta & Ryan, 2010). Thus, hedonic motivation implies a sensitivity to punishment stimuli, a central component of avoidance disposition (Elliot & Thrash, 2010). However, a hedonic motivational orientation can also be understood as the *maximization* of rewards and benefits (Huta & Ryan, 2010), implying a desire to gain or obtain something, which may explain why this construct was not related to avoidance, but rather positively associated with approach motivation at the dispositional level. As further evidence that *maximizing* may be more defining of hedonic motivation, results of the EFA indicate that hedonic and approach motivation loaded strongly onto the same factor (Factor 1). However, it is also possible that hedonic motivation loaded onto this factor because of its positive correlation with eudaimonic motivation.

Further complicating findings, results of the EFA also showed that hedonic and approach motivation loaded moderately onto the second factor (Factor 2), which also had a (weak) loading from avoidance motivation, demonstrating that there is at least some degree of association between avoidance and hedonic motivation. Thus, avoidance, hedonic, and approach motivation may all be interrelated to some degree. Future research

is needed to better understand the nature of these associations and their potential implications. Overall, my results, combined with theoretical interpretations, indicate that the complementary motivational pairs of approach/avoidance and eudaimonic/hedonic require further research to understand how, and when, they are related.

*Exploratory factor analysis of all six orientations: Separate motivational “sets”?*

The results considered above provided full support for Hypothesis 1A, concerning intrinsic, approach, and eudaimonic, and partial support for Hypothesis 1B, concerning extrinsic, avoidance, and hedonic. However, from the correlation and EFA results discussed for each set, it is evident that there is overlap between the concepts associated with Hypothesis 1A and 1B.

When considered in full, the results from the EFA showed two distinct factors. Factor 1 had strong and positive loadings from autonomous, approach, eudaimonic, and hedonic dispositions. Factor 2 had a moderate loadings from approach (positive) and hedonic (dispositions). Control and avoidance dispositions did not have strong loadings onto either factor, but rather weak loadings onto Factor 1 and Factor 2, respectively. There are several important implications of this overall pattern of results with regards to my hypothesized sets of constructs. The first two implications address each hypothesized set—whether or not the constructs associated with Hypothesis 1A and Hypothesis 1B actually appear to go together. The third implication addresses whether or not these sets are separable from one another.

First and foremost, such findings provide clear evidence for the association between intrinsic, approach, and eudaimonic motivation. Intrinsic, approach, and eudaimonic motivational dispositions all have moderate to strong positive loadings on

Factor 1. Curiously, hedonic motivation loads with these constructs, and in fact has the *strongest* loading on Factor 1. One potential explanation may be that intrinsic, approach, and eudaimonic are a set of motivational constructs, and hedonic motivation is simply redundant with some aspect of each of these constructs both conceptually (i.e., focus on personal desires, maximization, and pleasure as a by-product of authenticity), and empirically, as hedonic motivation was positively correlated with each of these constructs in the pairwise correlations. This possibility is further supported by Huta and Ryan's (2010) work identifying the strong empirical and theoretical links between eudaimonic and hedonic motivation. It may also be that Factor 1 is not representing the special combination of intrinsic, approach, and eudaimonic motivation, per se, but rather a more general "positive" motivation factor, given the loading from hedonic motivation. To put it another way, Factor 1 is representing motivational constructs that lead individuals to seek and pursue desired outcomes. Overall, the present findings provide initial evidence that intrinsic, approach, and eudaimonic motivation comprise a single set of motivational orientations. However, whether this set consists of the three hypothesized constructs, or perhaps also includes hedonic motivation has yet to be clarified.

The second implication of the EFA results is with respect to the second hypothesized set of concepts—extrinsic, avoidance, and hedonic motivation. Although results discussed above indicate some pairwise associations, the EFA indicates that one of these concepts overlaps with those associated with Hypothesis 1A (given the loadings from hedonic motivation described above), and that the other two (controlled and avoidance dispositions) do not load strongly onto either factor, indicating that these constructs may *not* be a related set. It is not entirely clear why neither controlled or

avoidance motivation had strong, or even moderate, loadings on either factor in the EFA. Given controlled motivation's weak loading onto Factor 1, it is reasonable to think that, although controlled motivation is not strongly related to the other constructs on this factor, it still shares some underlying motivational process(es) with them, including perhaps an overall orientation toward pursuing desired outcomes (despite the qualitative differences in the outcomes sought by individuals high in controlled orientation).

Avoidance motivation may not have loaded onto either factor as a result of a major difference when considering the motivational constructs more generally. It may be that some sort of general tendency toward *seeking* underlies all other concepts in my study. For example, individuals with an autonomous disposition may seek to pursue personally valued activities whereas individuals with a hedonic disposition may seek enjoyable outcomes. Avoidance motivation may be qualitatively different from the other types of motivation at the disposition level in that it implies shying away from, not searching for, an outcome (Elliot & Thrash, 2002; 2010). Future research is needed to determine whether or not avoidance motivation is in fact a separate process from the other types of motivation, and what the implications of this dissociation may be.

The third implication is with respect to whether or not these sets are in fact separate from one another, as hypothesized. Factor 1 provides some evidence for this, but may be better characterized as a positive motivation factor, as discussed above. Evidence for the separation of these hypothesized sets comes largely from Factor 2 of the EFA. Although loadings on this factor are not impressively strong, there is a clear pattern of results indicating important distinctions among the pairs and sets of constructs. Specifically, whereas intrinsic, approach, and eudaimonic dispositions all have small to

moderate *positive* loadings; controlled, avoidance, and hedonic dispositions have zero, small negative, and moderate *negative* loadings, respectively; indicating some conflict among the pairs of concepts. Thus, Factor 2 demonstrates that there is in fact something different about the two sets of motivational dispositions. Given this, Factor 2 may represent an “optimal” motivation factor comprising greater intrinsic, approach, and eudaimonic dispositions, and lesser or no controlled, avoidance, and hedonic dispositions. It seems, therefore, that this second factor represents the presence of motivational orientations that have previously been seen as beneficial and producing positive outcomes (intrinsic, approach, eudaimonic), and the absence of orientations that have previously been seen as costly or producing less beneficial outcomes (extrinsic, avoidance, hedonic), within their respective research literatures (e.g., Elliot & Thrash, 2010, Huta & Ryan, 2010; Neyrinck et al., 2006).

***Goal-level motivation.***

*Autonomy, approach, and eudaimonic orientations.* Providing partial support for Hypothesis 1A, results showed a positive association between intrinsic and eudaimonic motivation at the goal level. This result is consistent with previous literature theoretically linking the two concepts (Ryan et al., 2008; Waterman et al., 2008). My results provide the first direct *empirical* evidence that these two constructs are linked. Further, results from the EFA of the goal-level measures demonstrated that these two constructs load positively together on the same factor. Such results indicate that at the goal level, intrinsic and eudaimonic motivation may be related, co-occurring goal orientations that guide individuals’ actions by focusing and directing one’s pursuits on self-chosen, personally meaningful goals. This finding is consistent with my proposal that together these goal

orientations reflect part of a *special* motivational combination that may produce stronger associations with constructs with which they are individually associated. However, given the theoretical—and now empirical—overlap, additional research is needed to examine if intrinsic and eudaimonic goals are in fact separable, unique concepts, rather than attributable to the same underlying process.

Contrary to Hypothesis 1A, approach goals was not correlated with, nor loaded on to the same factor as, intrinsic and eudaimonic goals. Despite strong empirical and theoretical work behind my predictions (e.g., Elliot & McGregor, 2001; Ryan & Deci, 1999), I did not find associations consistent with previous literature. This is likely due to characteristics of the data. Specifically, the approach goals mean was near the scale maximum with very low variability. Due to the skewed nature of this variable, further research is needed, using a measure allowing for (or participants and situations resulting in) more variability, in order to explore how approach goals relate to the other two motivational constructs at the goal level, and whether or not the special combination I found evidence for at the disposition level does in fact also exist at the goal level.

*Controlled, avoidance, and hedonic orientations.* Providing partial support for Hypothesis 1B, my results showed a positive association between extrinsic and hedonic goals. This association was expected based on conceptual similarities in each of these concepts respective literatures (e.g., Deci & Ryan, 2008; Huta & Ryan, 2010). My results provide the first *empirical* evidence that these concepts are in fact related. Specifically, results indicate that individuals whose goals are more influenced by external influences, demands, and pressures, also tend to seek more fun and enjoyment from pursuing and achieving their goals. This again highlights an oversight of previous empirical and

theoretical work (e.g., Ryan et al., 2008; Waterman et al., 2008) of focusing exclusively on the links between intrinsic and eudaimonic motivation, largely ignoring their counterparts, extrinsic and hedonic motivation. Future research should strive for conceptual integration between these pairs of concepts.

It is important to note, however, that extrinsic goals loaded only weakly (but positively) with hedonic goals on the first factor from the EFA. Despite the factor loading from extrinsic goals, it did not load more strongly on the second factor and, in fact, on Factor 2 its loading was in the opposite direction from the loading from hedonic goals (albeit both loadings on Factor 2 were small in magnitude). Thus, although future research examining the association between extrinsic and hedonic goals is needed to better understand the ways in which these constructs are associated and what their implications may be, my results provide preliminary evidence that they may be jointly related, co-occurring, goal orientations.

Contrary to Hypothesis 1B, avoidance goals was not correlated with, nor loaded on to the same factor as, extrinsic and hedonic goals, with respect to Factor 1. For Factor 2, however, avoidance goals loaded strongly and positively, along with weak positive and negative loadings, respectively, from extrinsic and hedonic goals. Despite strong empirical and theoretical work behind my predictions (e.g., Elliot & McGregor, 2001; Ryan & Deci, 1999), I did not find associations consistent with previous literature. This is likely due to skewness of the avoidance goal variable. Specifically, the avoidance goals mean was near the scale minimum with very low variability. Due to the skewed nature of this variable, further research is needed, using a methodology (measurements,



participants, situations) resulting in more variability, in order to explore how avoidance goals relate to the other two motivational constructs at the goal level.

*Exploratory factor analysis of all six orientations: Separate motivational “sets”?*

The results considered above provided partial support for Hypothesis 1A, concerning intrinsic, approach, and eudaimonic goals, and partial support for Hypothesis 1B, concerning extrinsic, avoidance, and hedonic goals. However, the question remains as to whether or not these constructs associated with each Hypothesis 1A and 1B are in fact separable sets. When considered jointly, the results from the EFA of all six goal-level motivational variables showed two distinct factors. Factor 1 had moderate to strong and positive loadings from intrinsic, eudaimonic, and hedonic goals, and a weak, positive loading from extrinsic. Factor 2 had a moderate loading from approach (negative), and a strong loading from avoidance (positive), goals. There are several important implications of this overall pattern of results with regards to my hypothesized sets of constructs. The first two implications address each hypothesized set—whether or not the constructs associated with Hypothesis 1A and Hypothesis 1B actually appear to go together. The third implication addresses whether or not these sets are separable from one another.

First, these findings provide some evidence for the association between intrinsic, approach, and eudaimonic motivation. Intrinsic and eudaimonic goal motivation had moderate to strong positive loadings on Factor 1. It is likely that approach goals did not load onto this factor due the nature of the data (i.e., skewness, as described above). Hedonic motivation also loaded with these intrinsic and eudaimonic goals, and in fact has the *strongest* loading on Factor 1. One potential explanation that was provided for this at the disposition level was that it may be that at the goal level, intrinsic, approach, and

eudaimonic are a set of motivational constructs (as hypothesized), and hedonic goal motivation is simply redundant with some aspect of each of these constructs at a conceptual-level (i.e., focus on personal desires, maximization, and pleasure as a by-product of authenticity). However, at the goal level, hedonic motivation *was* positively associated with eudaimonic goals, but negatively associated with approach goals, and showed no association with intrinsic goals. Thus, at the goal level it is likely the shared variance between eudaimonic and hedonic goals that places hedonic motivation onto Factor 1. This idea is supported by Huta and Ryan's (2010) research outlining the nature of these concepts, but is at odds with their empirical work, which found no significant association between eudaimonic and hedonic motivation at the goal level. Thus, future research is needed to assess this, and to ascertain *why* this pattern is different at the two levels of analysis.

It may also be that Factor 1 is not representing any sort of special combination, but rather a more general 'positive' goal motivation factor, given the loading from hedonic motivation. To put it another way, Factor 1 is representing goal motivation constructs (with the exception of approach goals) that lead individuals to pursue desired outcomes. Yet another possibility is that given the approach and avoidance variables were so skewed, and loaded together onto Factor 2, Factor 1 is representing all normally distributed variables in the data, a much less theoretically intriguing idea. Overall, the present findings provide partial evidence that intrinsic, approach, and eudaimonic motivation may comprise a single set of goal motivation constructs. However, whether this set consists of the three hypothesized constructs, or perhaps also includes hedonic motivation has yet to be clarified. The key to assessing this in the future will be

measuring approach and avoidance goals as separate variables using an approach, or within a target sample, that would provide increased variability.

The second implication of the EFA results is with respect to the second hypothesized set of concepts—extrinsic, avoidance, and hedonic goal motivation. My findings provide minimal evidence that these constructs may comprise a set. It is likely that avoidance goals did not load onto the same factor as extrinsic and hedonic goals due to the nature of the data (as described above). Although extrinsic and hedonic goals loaded positively onto the same factor (i.e., Factor 1), they had weak and opposing loadings (positively and negatively respectively) on Factor 2. Given the weak loading of extrinsic goals onto both factors, it is reasonable to think that although extrinsic motivation is not strongly related to the other constructs, it still shares some underlying motivational process(es) with them, including perhaps an overall orientation toward pursuing desired outcomes (despite the qualitative differences in the outcomes sought by individuals high in extrinsic goal motivation).

The third implication is with respect to whether or not these sets are in fact separate from one another, as hypothesized. My results provide little evidence for this, with constructs from two of the three pairs of constructs loading onto Factor 1, and the third pair of constructs loading onto Factor 2. This would suggest two sets of constructs, but not in the way I had anticipated, with one construct from each pair comprising the sets. Rather, results of the EFA indicate that the pairs of intrinsic/extrinsic and eudaimonic/hedonic motivation are a set, and approach and avoidance are a set. This result will not be theoretically interpreted, as it is likely data-driven, that is, a product of skewed variables with low variability. Thus, further research is needed in order to

determine whether these constructs are separate sets, based on an improved measurement strategy for approach and avoidance goals, or use of different samples or target goals—all of which may allow for greater variability in future research.

***Combining disposition-level and goal-level motivation.*** Thus far, results for my first two hypotheses—that intrinsic, approach, and eudaimonic motivation would be strongly and positively interrelated (Hypothesis 1A), and that extrinsic, avoidance, and hedonic motivation would be strongly and positively interrelated (Hypothesis 1B)—have been discussed at the disposition and goal levels, respectively. The following section will focus on the remaining two hypotheses associated with Research Goal 1 of this study—that the predicted patterns of association would occur at both the disposition and goal levels (Hypothesis 1C), and that strong and positive correlations were expected between corresponding motivational concepts across the disposition and goal levels (Hypothesis 1D). Specifically, in order to confirm Hypotheses 1C and 1D, I expected that results of an EFA encompassing all 12 dispositional and goal-level motivational constructs would reveal two large factors, one with strong loadings from intrinsic, approach, and eudaimonic motivation at the dispositional and goal levels, and the other with strong loadings from extrinsic, avoidance, and hedonic motivation at the dispositional and goal levels. Interestingly, results from the EFA revealed not a two, but a five factor structure. Implications of each of the five factors as well as the overall factor structure are discussed below.

***Factor 1 – Optimal Motivation.*** Providing partial support for Hypotheses 1A and 1C, Factor 1 had moderate to strong positive loadings from autonomous, approach, eudaimonic, and hedonic dispositions, as well as intrinsic and eudaimonic goals.

Providing support for Hypothesis 1D, moderate positive pairwise correlations were also observed between autonomous dispositions and intrinsic goals, as well as between eudaimonic dispositions and goals. Thus, the three constructs associated with Hypothesis 1A (intrinsic, approach, eudaimonic) all loaded together (supporting Hypothesis 1C) at the disposition and goal level—with the exception of approach goals, and the addition of hedonic goals. The two motivational constructs that loaded onto Factor 1 (intrinsic and eudaimonic) were also correlated across levels of analysis (supporting Hypothesis 1D). Thus Factor 1 appears to represent the special combination of intrinsic, approach, and eudaimonic motivation at the disposition and goal levels, with emphasis on the autonomous/intrinsic and eudaimonic aspects.

As previously described, it is assumed that approach goals did not load onto Factor 1 with the constructs it was expected to (i.e., intrinsic/eudaimonic) or correlate with its equivalent at the disposition level (i.e., approach dispositions) due to issues with assessment including a mean close to the scale maximum and low variability. It is expected that with use of different measurement techniques (or methodologies) approach goals would have loaded strongly onto Factor 1, thus providing full support for Hypothesis 1C. Also described above, it is assumed that hedonic dispositions loaded onto this factor because hedonic motivation is redundant with some aspect of each of these constructs both conceptually (i.e., focus on personal desires, maximization, and pleasure as a by-product of authenticity), and empirically, as hedonic disposition was positively correlated with each of these constructs in the pairwise correlations.

In contrast, although hedonic goals was positively associated with its equivalent at the disposition level (hedonic dispositions; supporting Hypothesis 1D), as well as

approach and eudaimonic dispositions and intrinsic goals, hedonic goals did not load onto the first factor in the combined EFA. It is not entirely clear *why* assessing the two levels together seems to push hedonic goals off of the factor, or why this is observed *only* with respect to hedonic goals. This finding, in combination with the ambiguity as to why hedonic dispositions loaded onto Factor 1, indicate that hedonic motivation at both levels requires future research to better understand its relationships with the other motivational constructs across levels.

Factor 1 appears to generally represent the special combination of intrinsic, approach, and eudaimonic motivation at the disposition and goal levels, or “optimal motivation.” As discussed above with respect to the disposition-level, and goal-level, specific findings, this optimal motivation appears to consist of constructs producing positive outcomes (intrinsic, approach, eudaimonic), and the absence of constructs that have previously been seen as costly or producing less beneficial outcomes (extrinsic, avoidance, hedonic), within their respective research literatures (e.g., Elliot & Thrash, 2010, Huta & Ryan, 2010; Neyrinck et al., 2006). Amplifying this notion of optimal motivation reported in previous sections, the same constructs also loaded onto Factor 1 (with the exception of hedonic goals, which is not hypothesized to be a part of optimal motivation), when the disposition and goal levels were assessed simultaneously. Thus, the factor accounting for the largest amount of variance consists of optimal motivation constructs whether the levels or analysis are assessed separately or jointly. Accordingly, it is important for research to explore the co-occurrence of these constructs both at a theoretical level (i.e., integrating motivational constructs into more comprehensive theories), and an empirical level (i.e. assessing the correlates and effects of this

combination). Future research is also needed using alternative methods to assess approach goals, and in order to understand the contribution of hedonic motivation in order to support more fully the suggestion of this special combination.

It is also important to note that Factor 1 may simply be representing a positive motivation factor, consisting of constructs which lead individuals to seek, and pursue desired outcomes. Such concepts may be redundant with one another, or variations of the same underlying or generalized disposition-level and goal-level motivation. Thus, additional information is needed in order to ascertain whether these orientations are redundant, or in fact convey unique information, for example, in predicting other variables of interest including well-being, as addressed below with respect to Research Goal 2.

*Factor 2 – Hedonic and Eudaimonic.* Providing support for Hypothesis 1D, Factor 2 had moderate to strong positive loadings from hedonic dispositions, and hedonic and eudaimonic goals. In contrast to the results of the previous factor (where hedonic dispositions and goals did not load together), hedonic dispositions and hedonic goals occurred together on Factor 2. These findings support the idea that eudaimonic and hedonic motivation may co-occur as they are related levels of motivation (Huta & Ryan, 2010). One interpretation of such patterns centers around the “full life hypothesis,” according to which the combination of high eudaimonic and high hedonic motivation is associated with benefits for the individual (Huta & Ryan, 2010). However, a caveat to this notion is the fact that eudaimonic dispositions did not load onto Factor 2. It is not entirely clear as to why this occurred. One may speculate that given the mounting evidence for the optimal motivation combination (particularly at the disposition level)

represented by Factor 1, eudaimonic dispositions did not load onto Factor 2 given its associations with the other variables hypothesized to comprise this combination (approach, intrinsic). However, pairwise correlations showed that eudaimonic dispositions were associated with these constructs and with hedonic motivation at similar (moderate) magnitudes at the disposition and goal levels. Thus, more research is needed to understand the interrelations between optimal motivation, eudaimonic and hedonic motivation, at the disposition- and goal-levels of assessment.

*Factor 3 – Extrinsic Motivation.* Providing support for Hypothesis 1D, Factor 3 had strong positive loadings from controlled dispositions and extrinsic goals. Additionally, these constructs were positively associated in the pairwise correlations. These results indicate cross-level congruency for extrinsic motivation that is consistent with previous literature (Kasser & Ryan, 1993; Ryan et al., 2008). Such findings suggest that there is a common motivational process that underlies a general orientation to be externally influenced *and* to pursue externally-oriented goals that is unique to this pair of constructs. However, in contrast to Hypothesis 1B and 1C, these two constructs loaded *alone* on Factor 2, and did not have even moderate loadings on any of the four other factors. Such findings suggest that the motivational processes underlying extrinsic/controlled motivation at the disposition and goal levels may be fundamentally different from the other motivational constructs assessed in this study. Future research is needed in order to further examine this idea and elucidate what these differential motivational processes are.

*Factor 4 – Hedonic versus Eudaimonic Motivation.* Factor 4 had a moderate *positive* loading from hedonic dispositions and a moderate *negative* loading from



eudaimonic goals. This finding is not consistent with any of my hypotheses. It is interesting to note that on the first factor, hedonic dispositions loaded with eudaimonic dispositions and goals (all positively), and on the second factor, eudaimonic goals loaded with hedonic dispositions and goals (all positively). Further, both concepts, at one or both levels, loaded onto the first factor, which would indicate some overlap or redundancy between these constructs. In stark contrast, Factor 4 represents aspects of hedonic dispositions and eudaimonic goals that appear to be in competition with one another. Considering the EFA patterns across the five factors, these two concepts share a complex relationship, despite a small positive pairwise association. As such, it is unclear whether eudaimonic and hedonic motivation are positively co-occurring or competing concepts. Future research is needed to better understand the complex nature of their relationship, particularly when examined in the presence of (i.e., controlling for) other theoretically relevant motivational constructs such as intrinsic and approach motivation.

*Factor 5 – Approach versus Avoidance Goals.* Factor 5 had a strong positive loading from approach goals and a strong negative loading from avoidance goals. This finding is not consistent with any of my hypotheses. Factor 5 appears to represent the competition between approach and avoidance goals. Although this idea is consistent with the literature (e.g., Elliot & Church, 2002; Elliot & Sheldon, 1997; Elliot et al., 2011), these variables may also have loaded together separate from all other constructs because both variables were extremely skewed (Ferguson & Cox, 1993). Consistent with this explanation, and in contrast to Hypothesis 1D and previous research (e.g., Elliot & Thrash, 2002), neither approach nor avoidance goals were significantly associated with their equivalent concepts at the disposition level (approach and avoidance temperaments,

respectively). Future research using varied measures and methods to assess approach and avoidance goals in different populations are needed in order to better assess how these constructs relate to the other motivational constructs when assessed simultaneously.

*Considering the five-factor structure.* The five factor structure obtained when assessing all 12 motivational constructs simultaneously provides preliminary support for some of my central hypotheses, particularly with respect to Hypothesis 1A, Hypothesis 1C (for the constructs associated with 1A), and Hypothesis 1D. These results indicated that motivational constructs that are typically studied separately may co-occur, and yet are not redundant with one another, either conceptually or empirically within and across dispositional and goals levels. The factor structure also raised several intriguing questions. For example, why did controlled and extrinsic motivation not load with any other constructs? Why did avoidance dispositions have no moderate to strong loadings on any of the five factors? Why did two of the motivational constructs (hedonic dispositions, and eudaimonic goals) each have moderate to strong loadings on three different factors? The current study demonstrates the importance of conducting future research aimed at integrating motivational concepts, both empirically and theoretically. One way in which such integration will be valuable is in understanding how motivation is related to personal outcomes, such as well-being, as discussed next.

**Research goal 2: Assessing associations between motivational constructs and well-being.** The second goal of this study was to examine how the various motivational constructs at the disposition and goal levels relate to eudaimonic and hedonic well-being. It was hypothesized that greater hedonic well-being would be predicted by greater intrinsic, lower extrinsic, greater approach, lower avoidance, greater eudaimonic, and

greater hedonic motivation (Hypothesis 2A), as would greater eudaimonic well-being (Hypothesis 2B). These general patterns were expected to emerge at both the dispositional and goal levels (Hypothesis 2C). Lastly, it was predicted that when comparing the disposition-level and goal-level motivation predictors across outcomes, greater intrinsic, greater approach, and greater eudaimonic motivation would be more strongly predictive of eudaimonic than hedonic well-being (Hypothesis 2D), whereas lesser extrinsic, lesser avoidance, and greater hedonic motivation would be more strongly predictive of hedonic than eudaimonic well-being (Hypothesis 2E). The pattern of results revealed and implications of these findings are discussed below. Note that the discussion will focus on the combined levels analysis because this analysis is the most comprehensive and informative with respect to the main research questions and hypotheses (see Table 11 for a comparison of associations between motivation and well-being based on pairwise, level-specific, and combined levels analyses).

***Disposition-level and goal-level motivation predicting well-being.***

*Predictors of hedonic well-being.* Providing partial support for Hypothesis 2A, greater hedonic well-being was predicted by lesser controlled dispositions, greater approach dispositions, lesser avoidance dispositions, greater approach goals, and greater hedonic goals. These findings are consistent with previous literature identifying similar associations for each construct individually (Deneve & Cooper, 1998; Elliot & Church, 2002; Elliot & Sheldon, 1997; Elliot & Thrash, 2010; Huta & Ryan, 2010; Neyrinck et al., 2006). This study is the first, however, to demonstrate that these disposition-level and goal-level motivation constructs are significant predictors of hedonic well-being when three pairs of motivational constructs, at two levels of analysis, are assessed

simultaneously. Such findings provide a better understanding of which constructs have unique predictive effects when motivation is conceptualized as a dynamic and integrated system, as opposed to pairs of constructs considered separable and studied in isolation from one another.

Table 11

*Summary of Disposition-Level and Goal-Level Motivation Constructs' Associations with Well-Being*

Level Construct	Hedonic Well-Being			Eudaimonic Well-Being		
	<i>r</i>	$\beta 1$	$\beta 2$	<i>r</i>	$\beta 1$	$\beta 2$
<b>Disposition</b>						
Autonomy	+			+	+	+
Control		-	-		-	
Approach	+	+	+	+	+	+
Avoidance	-	-	-	-	-	-
Eudaimonic	+			+	+	+
Hedonic				+		
<b>Goal</b>						
Intrinsic				+	+	
Extrinsic					-	
Approach	+	+	+			
Avoidance				-		
Eudaimonic	+	+		+	+	+
Hedonic	+		+	+		+

*Note.* Directions for significant associations are indicated by plus (+) and minus (-) signs. Blank cells indicate a significant association was not present.  $\beta 1$  corresponds to the separate level analysis,  $\beta 2$  corresponds to the combined levels analysis.

It is interesting that whereas two of the three significant, unique predictors of hedonic well-being at the dispositional level were *negative* predictors, both of the significant unique predictors of hedonic well-being at the goal level were *positive* predictors. This pattern of results may suggest that at the disposition level, having less negative motivation is more predictive of hedonic well-being than having more positive

motivation. Conversely, at the goal level, having more positive motivation is more predictive of hedonic well-being than having less negative motivation. However, not all of the positive motivation constructs were predictive of hedonic well-being at the goal level, and one that was (approach goals) had a skewed distribution and little variability, making it unclear whether this pattern of results is attributable to the constructs themselves, the valence of the motivational constructs, or some combination of the two. Nonetheless, this interpretation requires further research.

Contrary to Hypothesis 2A, neither of the two intrinsic concepts (autonomous dispositions and intrinsic goals), nor extrinsic goals were significant unique predictors of hedonic well-being. These findings are in contrast to previous research identifying autonomous dispositions (Deci & Ryan, 2008; Weinstein et al., 2012) and intrinsic goals (Rijavec et al., 2011; Sheldon & Kasser, 1998) as positively associated with hedonic well-being, and extrinsic goals (Kasser & Ryan, 1993; 1996; Sheldon et al., 2004) as negatively associated with hedonic well-being. Although it is not entirely clear why the intrinsic motivation constructs were not predictive of hedonic well-being, it may be due to a level of redundancy between these constructs and other motivational constructs. Specifically, autonomous dispositions and intrinsic goals were each positively associated with approach dispositions at the pairwise association level, and all three constructs loaded strongly and positively together on a single factor. Thus, the intrinsic motivation constructs may be redundant with approach dispositions, such that independent of this construct, they did not account for unique variance in hedonic well-being. This notion is particularly relevant to results concerning autonomous dispositions given that this aspect of motivation had a positive and significant pair-wise association with hedonic well-

being, whereas intrinsic goals did not. Future research is needed to better understand the nature of the relationships among the intrinsic and approach motivation concepts at the disposition and goal levels.

With respect to extrinsic goals, as discussed previously, it may be that the motivational process underlying extrinsic motivation, which is qualitatively different from those that may drive some of the other constructs of interest in this study (in particular, approach goals), is simply not a strong enough predictor of hedonic well-being. However, extrinsic goals was not significantly correlated with hedonic well-being at the pair-wise level. Further, extrinsic goals was not correlated with any individual component (positive affect, negative affect, life satisfaction) of hedonic well-being. This indicates that even in the absence of the other motivational predictors, extrinsic goals would not be predictive of hedonic well-being—a pattern of results inconsistent with previous research (Kasser & Ryan, 1993).

Contrary to Hypothesis 2A, avoidance goals was not a significant predictor of hedonic well-being. This finding is in contrast to previous literature linking avoidance goals to lower hedonic well-being (Elliot & Church, 2002; Elliot & Sheldon, 1997; Elliot et al., 2011). However, it is important to recall that the avoidance goal variable was extremely skewed. Given the non-normal distribution and low variability associated with this construct in my sample, the results may require further inquiry before clearer conclusions can be drawn concerning avoidance goals' predictive effect on hedonic well-being when assessed in the context of all the motivational constructs of interest. Although definitive conclusions cannot be drawn, it is worthy to note that of the approach/avoidance constructs, avoidance goals was the only non-significant predictor. If

future research, using methods, measures, or samples that allow for more reliable measurement of avoidance goals is able to establish this construct as a unique predictor also, this may suggest that the approach/avoidance motivation constructs *overall* (i.e., both concepts at each level) are particularly important in predicting hedonic well-being. Such findings would have numerous implications for the motivation and well-being literatures, as well as practical applications.

In further contrast to Hypothesis 2A, neither eudaimonic dispositions or goals, nor hedonic dispositions were significant unique predictors of hedonic well-being. These findings are in contrast to previous research finding each of these three constructs to be positively associated with hedonic well-being (Huta & Ryan, 2010). Although it is not entirely clear why these motivational constructs were not predictive of hedonic well-being, it may be due to a level of redundancy between these and other constructs assessed in this model. Specifically, eudaimonic and hedonic dispositions and eudaimonic goals were each positively associated with approach dispositions *and* hedonic goals at the pairwise association level. Further, eudaimonic and hedonic dispositions and eudaimonic goals loaded positively onto the same factor as approach dispositions, whereas hedonic dispositions and eudaimonic goals loaded onto a second factor with hedonic goals. Taken together, this pattern of results suggests that the three non-significant eudaimonic/hedonic predictors may be redundant with approach dispositions and hedonic goals, such that independent of these constructs, they did not account for unique variance in hedonic well-being.

This explanation may be particularly relevant to eudaimonic dispositions and goals, given that each of these variables had positive and significant pair-wise

correlations with hedonic well-being, whereas hedonic dispositions did not. Further, even when examining the individual components of hedonic well-being (positive affect, negative affect, life satisfaction), hedonic dispositions showed a significant association with positive affect only. This is in contrast to Huta and Ryan's (2010) work, wherein hedonic dispositions showed significant correlations to each of the components.

However, hedonic dispositions was significantly associated to negative affect and life satisfaction in only two of the four studies conducted by Huta and Ryan (2010). Thus, the present findings, as well as the previous research, seem to indicate that although hedonic dispositions and hedonic well-being are related, the association appears to be conditional. Future research is needed in order to examine and reveal the conditions under which hedonic dispositions and well-being are, and are not, significantly associated, and if this conditional pattern of results is extended to the other eudaimonic/hedonic concepts.

*Pattern of hedonic well-being predictors across levels.* Providing a small amount of evidence for Hypothesis 2C, only approach motivation was a significant predictor of hedonic well-being at the disposition and goal levels when all 12 motivational constructs were assessed simultaneously. This finding is consistent with previous literature that has found positive associations between approach dispositions (Keyes et al., 2002; Schmutte & Ryff, 1997), and goals (Elliot & Church, 2002; Elliot & Sheldon, 1997; Elliot et al., 2011) and hedonic well-being. Although this finding was expected, it is valuable as this study is the first to link approach dispositions and goals with hedonic well-being when assessed simultaneously with other motivational constructs. Of further theoretical importance, given approach motivation was the *only* significant predictor at *both* levels, it



may be that this construct has particular importance, more so than any other, in relation to hedonic well-being—a notion that requires further research.

Although there was little cross-level consistency with respect to the variables predicting hedonic well-being, this study is the first to simultaneously analyze multiple pairs of constructs at two levels of analysis. Thus, from an integrative perspective, aiming to uncover what happens when we “put it all together,” some of the differences and null predictive effects are worthy of mention, and perhaps even telling of the structure of our motivational system more broadly. Thus, the remainder of this section will focus on this for each pair of constructs.

Contrary to Hypothesis 2C, intrinsic motivation (assessed as autonomous dispositions and intrinsic goals) and extrinsic motivation (assessed as controlled dispositions and extrinsic goals) were not positive and negative predictors of hedonic well-being, respectively, across levels. These findings are inconsistent with prior research (assessing the constructs and/or levels of analysis *separately*) demonstrating both of the intrinsic (dispositions, goals) and extrinsic (dispositions, goals) motivation concepts to be significantly associated with hedonic well-being (e.g., Kasser & Ryan, 1993; Neyrinck et al., 2006). It may be that autonomous/intrinsic dispositions and goals are redundant with one another as each construct had a small to moderate pairwise correlation with hedonic well-being, but the constructs had a stronger correlation with one another. Further, autonomous dispositions and intrinsic goals both loaded strongly onto the same factor in an EFA assessing both levels simultaneously. Moreover, other constructs associated with optimal motivation loaded onto this first factor. Thus, it may be that intrinsic motivation is redundant across levels and with other constructs in predicting hedonic well-being and

that the construct's contribution to hedonic well-being is not level-specific or attributable to the construct alone.

Extrinsic motivation was a significant predictor of hedonic well-being at the disposition, but not the goal level. Given extrinsic dispositions and goals were moderately and positively associated and loaded together, by themselves, onto a single factor in an EFA, it is likely that extrinsic motivation's contribution to hedonic well-being is at the disposition, and not the goal, level. However, neither level of extrinsic motivation was significantly associated with hedonic well-being in the pairwise correlations. Thus, it appears that extrinsic motivation has its negative predictive effect only at the disposition level, and only when being assessed simultaneously with other motivational constructs. More research is required in order to better understand this pattern of results.

In contrast to Hypothesis 2C, avoidance motivation was not a negative predictor of hedonic well-being across levels. This is inconsistent with prior research (assessing the constructs and/or levels of analysis *separately*) finding avoidance dispositions and goals to be significant predictors of hedonic well-being (e.g., Elliot & Church, 2002; Elliot & Sheldon, 1997; Elliot & Thrash, 2010; Elliot et al., 2011). In contrast to my hypothesis, whereas avoidance dispositions *was* a significant predictor of hedonic well-being, avoidance goals *was not* a significant predictor of hedonic well-being. Given that avoidance motivation at the disposition and goal levels were not correlated, did not load together, and only the disposition level was associated with hedonic well-being at the pairwise level, it may seem that the two levels are unrelated, with only the disposition level predictive of hedonic well-being. This may be due to the fact that avoidance disposition and hedonic well-being have a common component—negative affect (i.e.,

individuals with a stronger avoidance disposition have a greater propensity to experience negative affect, whereas individuals with lower hedonic well-being experience more frequent negative affect) —which may account for the association between these variables. In contrast, negative affect is not considered to be a core component of avoidance goals. However, given the issues with the avoidance goal variable described in earlier sections, meaningful conclusions about the pattern of results for avoidance motivation cannot be reliably drawn.

Contrary to Hypothesis 2C, eudaimonic and hedonic dispositions, and eudaimonic goals, were not positive predictors of hedonic well-being across levels. Rather, only hedonic goals was predictive of hedonic well-being. These findings are inconsistent with prior research finding such associations when assessing the constructs and levels separately (Huta & Ryan, 2010). It may be that eudaimonic dispositions and goals are redundant with one another as each construct had a small pairwise correlation with hedonic well-being, but the constructs also all had a small correlation with one another. Further, eudaimonic dispositions and goals both loaded strongly onto the same factor in an EFA assessing both levels simultaneously. Moreover, other constructs associated with optimal motivation loaded onto this first factor. Thus, it may be that eudaimonic motivation is redundant across levels and with other constructs in predicting hedonic well-being and that the construct's contribution to hedonic well-being is not level specific or attributable to the construct alone.

With respect to hedonic motivation, only hedonic goals was a significant, positive predictor of hedonic well-being. As with eudaimonic motivation, it may be that hedonic dispositions and goals are somewhat redundant with one another as they had a moderate

pairwise association with one another, and did load moderately to strongly together on one of the factors of the EFA. However, only hedonic goals had a pairwise correlation with hedonic well-being. As discussed in the previous section, it appears that hedonic dispositions may share a relationship with hedonic well-being that is contingent on some other, third variable. It would be interesting for future research to examine whether or not hedonic goals may simply be a better predictor than hedonic dispositions in a sample where both constructs are positively associated with hedonic well-being at the pairwise level.

Lastly, it may be that the constructs in this pair are redundant with one another. Specifically, hedonic dispositions and goals were each positively associated with eudaimonic dispositions and goals. Further, constructs associated with this pair loaded together on three of the five factors of the EFA described with respect to Research Goal 1. The fact that the redundancy associated with this pair may not only be within-construct/across-level, but also between-construct/across-level, and between-construct/within-level, once again highlights the complex association between hedonic and eudaimonic motivation. This raises some question as to what the true differences between these constructs are. Disentangling the predictive effects of these constructs will be a valuable task for future research.

*Predictors of eudaimonic well-being.* Providing some support for Hypothesis 2B, greater eudaimonic well-being was predicted by greater autonomous dispositions, greater approach dispositions, lesser avoidance dispositions, greater eudaimonic dispositions, greater eudaimonic goals, and lesser hedonic goals. These findings are consistent with previous literature linking (a) autonomous dispositions to greater eudaimonic well-being

(e.g., Neyrinck et al., 2006), (b) approach and avoidance temperaments to greater and lesser (respectively) eudaimonic well-being (Keyes et al., 2002; Schmutte & Ryff, 1997), and (c) eudaimonic dispositions and eudaimonic goals to greater eudaimonic well-being (Huta & Ryan, 2010). In contrast to previous research finding hedonic goals to be positively associated with eudaimonic well-being (Huta & Ryan, 2010), this variable was a negative predictor in my sample. It is important to note, however, that these researchers found hedonic goals to be significant positive predictors of some aspects of eudaimonic well-being, and unrelated to others (Huta & Ryan, 2010). Given the measures I used to assess eudaimonic well-being were not the same as those utilized in previous research, it may be that hedonic goals are positively associated with some aspects of eudaimonic well-being, negatively associated with some aspects of eudaimonic well-being, and yet unrelated to other aspects of well-being. Aside from this deviation, the findings are as expected and consistent with previous literature. Further, my findings have theoretical importance as this study is the first to demonstrate these constructs to be significant, unique predictors of eudaimonic well-being when assessed simultaneously with all constructs from both levels.

Additionally, three of the unique predictors—autonomous, approach, and eudaimonic dispositions—represent the special combination of optimal motivation discussed earlier with respect to findings concerning Research Goal 1. This finding lends support to the idea that not only do these constructs “go together,” but they may not be redundant with one another in predicting eudaimonic well-being. More specifically, the results indicate that autonomous, approach, and eudaimonic dispositions may be separate constructs, that can occur together, and yet each may have unique contributions in

predicting eudaimonic well-being. This raises the question as to whether the positive predictive effects of these distinct constructs may interact to produce particularly positive outcomes with respect to eudaimonic well-being—a notion that will be assessed in Study 2.

Contrary to Hypothesis 2B, neither intrinsic goals nor either of the extrinsic motivation constructs (dispositions and goals) were significant unique predictors of eudaimonic well-being. These findings are in contrast to previous research identifying intrinsic goals (Rijavec et al., 2011; Sheldon & Kasser, 1998) as positively associated with eudaimonic well-being, and controlled dispositions (Neyrinck et al., 2006) and extrinsic goals (Kasser & Ryan, 1993; 1996; Sheldon et al., 2004) as negatively associated with eudaimonic well-being. Although it is not entirely clear why intrinsic goals was not predictive of eudaimonic well-being, it may be due to a level of redundancy between this and the other motivational constructs. Specifically, although intrinsic goals was positively associated with eudaimonic well-being at the pairwise level, it was also significantly associated with autonomous, approach, and eudaimonic dispositions, as well as eudaimonic and hedonic goals—all of which were significant, unique predictors of eudaimonic well-being. Thus, given intrinsic goals was significantly associated with nearly all the predictors of eudaimonic well-being, its predictive effect was likely redundant with some or all of the others.

With respect to the extrinsic motivation constructs, as discussed previously (with respect to Research Goal 1), it may be that the motivational process underlying controlled dispositions and extrinsic goals, which is qualitatively different from those that may drive some of the other constructs of interest in this study is simply not a strong enough

predictor of eudaimonic well-being when assessed in conjunction with other motivational constructs. However, neither controlled dispositions nor extrinsic goals were significantly correlated with eudaimonic well-being at the pairwise association level. This indicates that even in the absence of the other motivational predictors, controlled dispositions and extrinsic goals were not predictive of hedonic well-being in my sample—a pattern of results inconsistent with previous research (Kasser & Ryan, 1993; Neyrinck et al., 2006).

Contrary to Hypothesis 2B, approach and avoidance goals were not positive and negative significant predictors of eudaimonic well-being, respectively. This finding is in contrast to previous literature linking approach goals to greater, and avoidance goals to lesser, eudaimonic well-being (Elliot et al., 2012). At the pairwise association level, only avoidance goals had a statistically significant (negative) relationship with eudaimonic well-being. This would indicate that avoidance goals would have been a significant predictor of eudaimonic well-being in the absence of the other motivational constructs. However, it is important to recall that both the approach and avoidance goal variables were extremely skewed. Given the non-normal distribution and low variability associated with these constructs in my sample, more research—utilizing methods, measures, and samples that allow for more normal distributions and greater variability—is needed before clear conclusions can be drawn concerning approach and avoidance goals’ predictive effect on eudaimonic well-being when assessed in the context of all the motivational constructs of interest.

In further contrast to Hypothesis 2B, hedonic dispositions was not a significant unique predictor of eudaimonic well-being. This finding is in contrast to previous research finding a positive association between this construct and eudaimonic well-being

(Huta & Ryan, 2010). Although it is not entirely clear why hedonic dispositions was not predictive of eudaimonic well-being, it may be due to redundancy between hedonic dispositions and other motivational constructs assessed in the analysis. Specifically, although hedonic dispositions was positively associated with eudaimonic well-being at the pairwise level, this construct was also positively associated with autonomous, approach, and eudaimonic dispositions, as well as eudaimonic and hedonic goals—all of which were significant, unique predictors of eudaimonic well-being. Thus, given hedonic dispositions was significantly associated with nearly all the predictors of eudaimonic well-being, its predictive effect was likely redundant with some or all of the others. In particular, as mentioned in a previous section, hedonic dispositions may be especially redundant with autonomous, approach, and eudaimonic dispositions as it appears to comprise some aspect of each of these constructs. Moreover, hedonic dispositions loaded strongly and positively with this optimal motivation combination. Future research is needed to explore and confirm these possibilities.

It is also worthwhile to note that of the eudaimonic/hedonic constructs, hedonic dispositions was the only non-significant predictor. Thus, even though the pattern of results obtained highlights the importance of the optimal motivation combination, it also demonstrates that the eudaimonic/hedonic constructs may be particularly important in predicting eudaimonic well-being. Such findings would have numerous implications for the motivation and well-being literatures, and well as practical applications. Further research is needed to assess and compare the roles of the optimal motivation combination and the eudaimonic versus hedonic concepts to further inform these ideas. Study 2 will aim to address these ideas.



*Pattern of eudaimonic well-being predictors across levels.* Providing a minimal amount of evidence for Hypothesis 2C, only eudaimonic motivation was a significant predictor of eudaimonic well-being at the disposition and goal levels when all 12 motivational constructs were assessed simultaneously. This finding is consistent with previous literature that has found positive associations between eudaimonic dispositions and goals and eudaimonic well-being (Huta & Ryan, 2010). Although this finding was expected, it is valuable as this study is the first to link eudaimonic dispositions and goals with eudaimonic well-being when assessed simultaneously with other motivational constructs. Of further theoretical importance, given eudaimonic motivation was the *only* significant predictor at *both* levels, it may be that this construct has particular importance, more so than any other, in relation to eudaimonic well-being. Thus, future research should explore whether or not eudaimonic motivation has stronger effects than other types of motivation when it comes to predicting eudaimonic well-being.

Although there was little consistency with predictors across levels when predicting eudaimonic well-being, this study is the first to simultaneously analyze multiple pairs of constructs at two levels of analysis. Thus, results regarding some of the differences and null predictive effects are worthy of discussion, and perhaps even telling of the structure of our motivational system more broadly. Thus, the remainder of this section will focus on this for each pair of constructs.

Contrary to Hypothesis 2C, intrinsic motivation concepts (assessed at autonomous dispositions and intrinsic goals) and extrinsic motivation concepts (assessed as controlled dispositions and extrinsic goals) were not positive and negative predictors of eudaimonic well-being, respectively, across levels. This is inconsistent with prior research finding

such associations when assessing the constructs and levels separately (e.g., Kasser & Ryan, 1993; Neyrinck et al., 2006). With respect to intrinsic motivation, only autonomous dispositions was a significant predictor of eudaimonic well-being. It may be that autonomous dispositions and intrinsic goals are redundant with one another as each construct had a small to moderate pairwise correlation with eudaimonic well-being, but the constructs had a stronger correlation with one another. Further, autonomous dispositions and intrinsic goals both loaded strongly onto the same factor in an EFA assessing both levels simultaneously. Moreover, other constructs associated with optimal motivation loaded onto this first factor. Thus, it may be that intrinsic motivation is most predictive of eudaimonic well-being at the disposition level, but that the construct's overall contributions to eudaimonic well-being is not specific or attributable to the construct alone.

Extrinsic motivation was not a significant predictor of eudaimonic well-being at the disposition or the goal level. Moreover, neither construct was associated with eudaimonic well-being at the pairwise association level. However, extrinsic dispositions and goals were moderately associated and loaded together, by themselves, onto a single factor in an EFA. This indicates that extrinsic motivation is a construct that is related across levels yet does not have unique contributions to eudaimonic well-being when assessed in tandem with the other motivational constructs. This conclusion has two important implications: 1) it provides further evidence for the idea that there is a separate process underlying extrinsic motivation (as described above), and 2) that the negative effects of extrinsic motivation (at both levels) may be over-powered by positive motivation. Both ideas require further research to confirm.

In contrast to Hypothesis 2C, approach and avoidance motivation were not positive and negative predictors of eudaimonic well-being, respectively, across levels. This is inconsistent with prior research finding such associations when assessing the constructs and levels separately (e.g., Elliot & Church, 2002; Elliot & Sheldon, 1997; Elliot & Thrash, 2010; Elliot et al., 2011). Rather, approach and avoidance dispositions were significant predictors of eudaimonic well-being, but approach and avoidance goals was not. Given that avoidance motivation at the disposition and goal levels were not correlated, did not load together, and only the disposition level was associated with hedonic well-being at the pairwise level, it may seem that the two levels are unrelated, with only the disposition level predictive of eudaimonic well-being. However, given the issues with the approach and avoidance goal variables described in earlier sections (i.e., skewed distributions, limited ranges), meaningful conclusions about the pattern of results for avoidance motivation cannot be drawn. Further, in contrast to Hypothesis 2C, hedonic motivation was not a positive predictor of eudaimonic well-being across levels. This finding is inconsistent with prior research finding such associations when assessing the constructs and levels separately (Huta & Ryan, 2010). As with predicting hedonic well-being, it may be that hedonic dispositions and goals are somewhat redundant with one another (due to their correlations with one another and with eudaimonic well-being, and their factor loadings), and with eudaimonic motivation (due to the cross-level and cross-concept correlations, and factor loadings). It may also be that of the hedonic concepts, dispositions are redundant with the optimal motivation combination, whereas goals are not. Future research is needed in order to examine whether this pattern of results is due to cross-concept or within-concept redundancy.

*Comparing predictive effects across types of well-being.* Thus far, discussion has centered on explaining results across levels of analysis but within each type of well-being separately. However, it is also important to examine results across types of well-being, in order to better understand the similarities and differences in the predictive effects of the disposition-level and goal-level motivation constructs across outcomes. The comparison of the predictive effects across types of well-being was conducted for the combined level analysis (see Table 10).

*Intrinsic, approach, and eudaimonic motivation.* In contrast to Hypothesis 2D, neither autonomous dispositions nor intrinsic goals was more predictive of eudaimonic than hedonic well-being. This finding is in contrast to previous literature highlighting the special association between intrinsic and eudaimonic concepts (Ryan et al., 2008; Waterman et al., 2008) and finding autonomous dispositions to be more related to eudaimonic than to hedonic well-being (Weinstein et al., 2012). Although this finding seems surprising, it is important to remember that the predictive effects being assessed, although specific to individual concepts, were estimated in the context of other motivational constructs at two levels. Additionally, both autonomous dispositions and intrinsic goals showed significant and larger associations with eudaimonic than hedonic well-being at the pairwise level (as ascertained by statistically comparing the magnitudes of the corresponding correlation coefficients shown in Table 4). Thus, both autonomous dispositions and intrinsic goals are more predictive of eudaimonic than hedonic well-being (as I had predicted) but only when assessed on their own; they do not show such a difference in the context of the other motivational constructs. Thus, it appears that the predictive effects of autonomous orientations and intrinsic goals are attenuated in the

presence of the other motivational constructs, indicating redundancy between these similar constructs.

Also in contrast to Hypothesis 2D, neither approach dispositions nor goals were more predictive of eudaimonic than hedonic well-being. This finding is in contrast to previous research finding an association between these variables and eudaimonic well-being (e.g., Elliot & Church, 2002; Elliot & Sheldon, 1997; Elliot & Thrash, 2010; Elliot et al., 2011). Although this finding seems surprising, it may be that, like discussed with the previous two concepts, there is not a difference in predictive effects between the two types of well-being when these constructs are assessed with other disposition-level and goal-level motivation concepts. Supporting this notion, approach dispositions was a stronger predictor of greater eudaimonic, than of greater hedonic, well-being at the pairwise level (as indicated by a statistical comparison of the corresponding correlation coefficients shown in Table 4). In contrast, approach goals showed no significant difference in its predictive strength. However, given the data were skewed for this variable, reliable estimates of predictive effects could not be ascertained. Thus, it is unclear whether this variable would have shown stronger associations with eudaimonic (vs. hedonic) well-being had alternate forms of assessment or sampling been utilized. Providing a small amount of evidence for Hypothesis 2D, only eudaimonic dispositions displayed significant differences in predictive effects across well-being outcomes. More specifically, greater eudaimonic dispositions was more strongly predictive of greater eudaimonic than lesser hedonic well-being. This is consistent with previous research finding that eudaimonic dispositions was predictive of more eudaimonic than hedonic well-being outcomes (Huta & Ryan, 2010). This finding is also informative of the debate

as to whether eudaimonic and hedonic well-being are different (Keyes et al., 2002). These findings suggest that a key difference may be the relatively greater predictive importance of eudaimonic dispositions to eudaimonic well-being than to hedonic well-being.

At the goal level, however, results provided no support for Hypothesis 2D concerning the predictive effect of eudaimonic goals. This finding is inconsistent with previous literature which found eudaimonic goals was related to eudaimonic, but not hedonic, well-being outcomes (Huta & Ryan, 2010). Similar to these researchers' findings, however, I found a stronger pairwise association between eudaimonic goals and eudaimonic well-being than between eudaimonic goals and hedonic well-being (when tested for significance, based on the correlation coefficients shown in Table 4). Therefore, when assessed in the context of the other motivational constructs, the predictive effect of eudaimonic goals on eudaimonic well-being (although positive and significant as predicted) was attenuated in the combined-level analysis due to redundancy with other predictors—in particular the concepts representing the dispositional-level optimal motivation constructs—and consequently did not have sufficient statistical power to be differentiated from its (non significant) predictive effect on hedonic well-being.

*Extrinsic, avoidance, and hedonic motivation.* In contrast to Hypothesis 2E, controlled dispositions was not more predictive of hedonic than of eudaimonic well-being. Although this finding was unexpected, previous research has noted that controlled dispositions have negative associations with both types of well-being (Neyrinck et al., 2006). Thus, it could be that controlled dispositions are simply not more predictive of one type of well-being, as suggested by their corresponding correlation coefficients (both of

which were near-zero and non significant; see Table 4). This finding is surprising within this sample, as controlled dispositions was a negative predictor of both types of well-being, but a unique predictor in the combined-levels analysis of only hedonic well-being, making it unclear why this unique predictive effect was not statistically stronger than a non-significant effect. As previously mentioned, the controlled disposition variables had an unclear pattern of results across the analyses—it may simply be that within my sample, the controlled disposition variable is producing unclear results due to measurement error, random error, insufficient statistical power, or some other explanation. Providing some support for Hypothesis 2E, extrinsic goals displayed a significant difference in predictive effects across well-being outcomes. More specifically, greater extrinsic goals was more strongly predictive of greater hedonic well-being than of lower eudaimonic well-being, even though both of the corresponding regression coefficients were themselves non-significant. This is consistent with the previous research finding strong associations between extrinsic goals and hedonic well-being (Kasser & Ryan, 1993). This finding is also informative of the debate as to whether eudaimonic and hedonic well-being are similar and/or different (Keyes et al., 2002). With respect to extrinsic motivation, these findings seem to indicate that a similarity between the two types of well-being may be the negative predictive effects of controlled motivation, whereas a key difference may be the predictive importance of extrinsic goals for greater hedonic well-being. It is important to note, however, that the predictive effects of extrinsic motivation were non-significant for both types of well-being, thus, it remains unclear how much extrinsic goals really “matter” in differentially predicting hedonic and

eudaimonic well-being. It would be valuable for future research to replicate these results in a sample wherein the predictive effects for extrinsic goals are significant.

Providing some further support for Hypothesis 2E, avoidance dispositions displayed a significant difference in predictive effects across well-being outcomes. More specifically, lower avoidance dispositions was more strongly predictive of greater hedonic than greater eudaimonic well-being. This is consistent with the previous research linking this construct to hedonic well-being outcomes in particular (Elliot & Thrash, 2010). This finding is also informative of the debate as to whether eudaimonic and hedonic well-being are different (Keyes et al., 2002). These findings suggest that a key difference may be the relatively greater predictive importance of avoidance dispositions to hedonic well-being than to eudaimonic well-being.

In contrast to Hypothesis 2D, however, avoidance goals did not differ in their predictive effects associated with eudaimonic versus hedonic well-being. This finding is in contrast to previous research finding an association between these variables and hedonic well-being (e.g., Elliot & Church, 2002; Elliot & Sheldon, 1997). Although this finding seems surprising, it is likely that the characteristics of the data led to this result. Specifically, given the data were skewed, reliable estimates of predictive effects could not be ascertained. Even when avoidance goals were assessed on their own, there was no difference in associations across well-being types in this sample (as indicated by their respective correlation coefficients). Given the distribution of this variable, however, it is unclear whether these findings are representative of avoidance goals in the way they were intended to be assessed in this study.



In contrast to Hypothesis 2E, hedonic dispositions was not more predictive of hedonic, than of eudaimonic, well-being. This finding is inconsistent with previous literature, which found hedonic dispositions to be more related to hedonic, than eudaimonic, well-being outcomes (Huta & Ryan, 2010). It may be that this is a result of the predictive effects being assessed in the context of other motivational constructs, specifically, those associated with the optimal motivation combination. As discussed previously, hedonic motivation, dispositions in particular, may share some overlap with the optimal motivation constructs. Given the predictive effects of hedonic dispositions was estimated in the context of this combination, they may have been attenuated, making the comparison irrelevant. However, there was no significant difference in the correlations between hedonic dispositions and hedonic and eudaimonic well-being. It may be that I did not find differences across the well-being types because I used measures of hedonic and eudaimonic well-being that were different than those utilized in previous research (as noted above, with respect to Huta & Ryan, 2010). Thus, given hedonic dispositions are generally regarded in the literature as related to *both* hedonic and eudaimonic well-being, it may be that any differences found in these predictive effects are an artifact of the chosen measures. This notion requires future research comparing results across samples using various measures of hedonic and eudaimonic well-being.

Providing some support for Hypothesis 2E, hedonic goals displayed a significant difference in predictive effects across well-being outcomes. More specifically, greater hedonic goals was more strongly predictive of greater hedonic well-being, than of lesser eudaimonic well-being. This is consistent with previous research, which has found hedonic goals to be particularly associated with hedonic well-being (Huta & Ryan, 2010).

This finding is also informative of the debate as to whether eudaimonic and hedonic well-being are different (Keyes et al., 2002). These findings suggest that a key difference may be the greater relative predictive importance of hedonic goals to hedonic well-being than to eudaimonic well-being.

When considering the results associated with the predictive effects of extrinsic, avoidance, and hedonic motivation, it is important to note that each construct was more predictive of hedonic than eudaimonic well-being at one level of analysis. This is noteworthy because the majority of results discussed thus far supported the ideas of optimal or positive motivation, indicating that these constructs are grouped together in ways that predict eudaimonic and hedonic well-being. In contrast, the results thus far have indicated that hedonic motivation is tangled up in this—representing pieces of, and redundant with, the optimal motivation combination—and that extrinsic and avoidance motivation are separate processes entirely, both from the other motivational constructs and one another. Thus, there was little evidence that extrinsic, avoidance, and hedonic constructs were meaningfully inter-connected. Results concerning the comparison of their predictive effects, however, indicate they are similar in that they may have greater relevance to predicting hedonic well-being than eudaimonic well-being.

### **Limitations**

In addition to the caveats and limitations already discussed above, several other issues are noteworthy. Firstly, with respect to measurement, all of the measures used in this study were self-report, and as a result, are subject to a wide range of response biases. For example, numerous (unmeasured) third variables (i.e., stress, personal situations, mood) could have impacted participants' responses. Nonetheless, the self-report measures

utilized in this study are the most common ways of assessing the constructs of interest in their respective literatures and all have good psychometric properties. Further, the very nature of some of the constructs are, by definition, subjective and personal (e.g., meaningful goals, life satisfaction); consequently, self-report is likely the most appropriate assessment strategy. Nonetheless, replicating these results in combination with or with the use of, other types of, or techniques for, measurement would be valuable. For example, incorporating observer or close others' reports may reduce response biases or social desirability, behaviour tracking may provide a more objective assessment of motivation, and measuring the variables and averaging scores over time may reduce random error and provide a more accurate representation of the constructs of interest.

A second limitation is with respect to the sample, which was primarily first-year female undergraduates. Previous research has found that the main outcome variables in this study—hedonic and eudaimonic well-being—may covary with demographic factors such as age, sex, and education (Diener et al., 1999; Ryff, 1989). Specifically, aspects of hedonic well-being (i.e., positive affect, negative affect, and life satisfaction) each fluctuate across the lifespan, show sex-related differences (i.e., greater frequency for positive and negative emotions in females) and may be positively related to education levels (Diener et al., 1999). Similarly, aspects of eudaimonic well-being fluctuate across the lifespan (i.e., lower environmental mastery and higher personal growth in younger versus older adults) and show sex-related differences (i.e., greater positive relations with others and more personal growth are experienced by women; Ryff, 1989). Given that my sample was comprised primarily of female undergraduate students, the findings may only apply to this particular population and not be generalizable to a larger population (i.e.,

men, middle-aged and older adults, and less-educated individuals). Future research should examine the links among disposition-level and goal-level motivation, and eudaimonic and hedonic well-being in various other populations.

Third, causality remains unclear due to the correlational design of this study. Whereas we examined 12 motivational concepts as *predictors* of eudaimonic and hedonic well-being, individual differences in eudaimonic and hedonic well-being may in fact predict or promote various aspects of motivation. Extending the current approach, it will be valuable to know not only what motivational constructs go together, and what these combinations relate to, but what these combinations *impact* or *cause*. Thus, experimental research assessing the joint impact of the motivational constructs is needed in order to better understand the potential causal implications, including the impact of various motivational combinations. These issues will be the focus of Study 2.

## **Conclusion**

Despite the aforementioned limitations, this study provides a valuable contribution to the literatures concerning the relationships among dispositional motivation, goal motivation, and eudaimonic and hedonic well-being. More specifically, prior to this study, there was no literature focusing on (empirically or theoretically) the differential patterns of association across levels of analysis when considering constructs simultaneously. My results clearly demonstrated that when assessing three separate pairs of motivation concepts simultaneously at two levels of analysis (disposition, goals), patterns of association evidenced when considering the constructs/levels separately were not consistent. For example, intrinsic and extrinsic goals, well-established predictors of well-being, did not significantly predict either hedonic or eudaimonic well-being when

assessed in conjunction with the other motivation variables. Findings such as this indicate that when considering a broad range of motivational constructs, the patterns of associations are not as simple as they seem when assessing pairs of constructs and/or levels separately. If the goal of this type of research is to understand how motivation impacts well-being, it is arguably more useful to try and understand the unique and cumulative (and interactive) effects of the various motivational orientations and goal-related motives individuals may possess at any given time. Such a perspective offers the potential for better understanding how motivation as an integrated system is related to well-being. Study 1 has provided a valuable step toward this goal. In Study 2, I extend this work by employing an experimental design in order to test how manipulation of each of the six motivational constructs individually (and in combination) affect hedonic and eudaimonic well-being.

## **Study 2 – Manipulating Motivational Concepts at the Goal Level and Testing the Impact on Two Forms of Well-Being**

Whereas Study 1 examined the associations among the motivation concepts and their predictive associations with well-being, Study 2 aimed to further add to existing literature by manipulating the six motivational concepts at the goal level and evaluating the impact on eudaimonic and hedonic well-being. Whereas dispositional-level motivation is seen as an enduring and stable part of personality (Elliot & Thrash, 2002), state-level motivation can vary by activity or goal (Chen, Gully, Whiteman, & Kilcullen, 2000), thus allowing for a shift in motivational focus. Therefore, Study 2 focusses on manipulating motivation at the goal (rather than dispositional) level.

### **Previous Research on Manipulating Goal-Level Motivation**

Previous research has empirically demonstrated that each pair of motivational concepts (intrinsic and extrinsic, approach and avoidance, and eudaimonic and hedonic) can be manipulated in a variety of ways at the goal or state level. Specifically, manipulations involving intrinsic and extrinsic, or approach and avoidance motivation have repeatedly shown significant results in a variety of domains (e.g., Braverman & Frost, 2012; Weinstein & Hodgins, 2009). For example, a study using sentence scramble tasks to prime intrinsic and extrinsic motivation found that induced intrinsic motivation leads to increased emotional expression and processing compared to priming extrinsic motivation (Weinstein & Hodgins, 2009). Using similar tasks, it has been found that participants primed with intrinsic motivation reported higher self-esteem (Hodgins, Brown, & Carver, 2007), behaved less defensively, showed less self-handicapping, and performed better than those primed with extrinsic motivation (Hodgins, Yacko, & Gotlieb, 2006).

Approach and avoidance motivation have also been successfully manipulated. For example, following verbal instructions framed in either an approach or avoidance manner and a task aimed at using an approach or avoidance strategy (i.e., guiding an object towards vs. away from something), participants in the approach condition showed greater gratitude than did those in the avoidance condition (Mathews & Shook, 2013). Using similar tasks, it has been found that individuals primed with approach motivation displayed more creativity and insight problem-solving than those primed with avoidance motivation (Friedman & Forster, 2001). Using written instructions, similar patterns were found, in that those primed with approach motivation expected more success and were more optimistic about reaching a goal (Braverman & Frost, 2012).

In addition, although less well-researched, a previous study has demonstrated that eudaimonic and hedonic motivation at the state level can be manipulated in ways that impact well-being. Huta and Ryan (2010) randomly assigned participants to either a eudaimonic or hedonic motivation condition where they were asked to engage in a daily activity of their choice that was typically motivated by their respective condition (i.e., doing something for fun and pleasure vs. doing something because it was personally meaningful and fulfilling). After the 10-day intervention, both conditions showed significant changes in both eudaimonic and hedonic well-being. The hedonic motivation condition showed more positive well-being outcomes than did the eudaimonic motivation condition, particularly in relation to hedonic well-being. Three months after the initial intervention, well-being benefits (both hedonic and eudaimonic) associated with both the eudaimonic and the hedonic motivation conditions were still present.

In summary, the existing research literature provides some evidence that each of the six motivational concepts can be manipulated and, furthermore, that these manipulations are impactful on individuals' well-being. At present, however, it is unclear how manipulating the three pairs of motivation concepts simultaneously will impact eudaimonic and hedonic well-being in similar or different ways. To inform this issue, Study 2 evaluated whether manipulating the six motivational concepts creates differential eudaimonic and hedonic well-being outcomes. Doing so has important theoretical and practical implications, in that it informs how the motivation concepts individually influence both types of well-being, as well as whether combinations of (i.e., interactions among) the motivational concepts are related to each type of well-being.

### **Research Goals, Questions, and Hypotheses**

The main goal of Study 2 is to determine how manipulating each of the three pairs of goal-level motivational constructs impacts eudaimonic and hedonic well-being. The guiding research question associated with this goal is: *How does manipulating the various goal-level motivational concepts influence each type of well-being?* It is expected that the goal-level manipulations will result in corresponding shifts in participants' motivational focus and therefore induce the effects on each type of well-being associated with the particular goal-level motivational construct, as summarized in Table 2 (Hypothesis 1). More specifically, hedonic well-being will be higher in the intrinsic compared to the extrinsic condition, higher in the approach compared to avoidance condition, and higher in the hedonic compared to the eudaimonic condition (Hypothesis 1A). Eudaimonic well-being will be higher in the intrinsic compared to the extrinsic



condition, higher in the approach compared to avoidance condition, and higher in the eudaimonic compared to the hedonic condition (Hypothesis 1B).

Further, it is also expected that motivational concepts that have similar individual associations with well-being (i.e. intrinsic, approach, and eudaimonic motivation; extrinsic, avoidance, hedonic) will interact, thus amplifying their effects on well-being (Hypothesis 2). More specifically, since research has demonstrated that intrinsic, approach, and eudaimonic goals are all associated positively with each other and with both types of well-being, it is expected that individuals assigned to the intrinsic, approach, and eudaimonic condition will have the highest level of hedonic (Hypothesis 2A) and eudaimonic (Hypothesis 2B) well-being immediately following the manipulation, compared to all other conditions.

Comparing the magnitude of the differences between types of well-being, it is expected that differences between the intrinsic versus extrinsic conditions will be larger with respect to eudaimonic than hedonic well-being (even though the direction of the differences will be the same across types of well-being, as conveyed in Hypothesis 1A and 1B); the magnitude of the difference in the approach versus avoidance conditions will be comparable for hedonic and eudaimonic well-being (as will the direction of the differences across types of well-being; see Hypothesis 1A and 1B); the magnitude of the difference between results in the hedonic versus eudaimonic conditions will be comparable for hedonic and eudaimonic well-being (even though the direction of the differences will be opposite to each other, across types of well-being, as conveyed in Hypothesis 1A and 1B) (Hypothesis 1C). Further, with respect to the anticipated interactions among the manipulated motivational goal construct pairings, for participants

in the combined intrinsic, approach, and eudaimonic goals condition, eudaimonic well-being will be higher than hedonic well-being (Hypothesis 2C).

As noted in a previous section, previous research typically assesses the motivational constructs separately. To date, no published studies have assessed and/or manipulated all three pairs of motivational constructs simultaneously. As a result, although the hypotheses outlined have a strong empirical basis, they have yet to be tested directly in previous research.

## Method

**Participants.** Participants were 447 Brock University undergraduate students ( $M$  age = 19.30,  $SD$  = 3.14; 88% female) who voluntarily participated in the study in return for course credit. Of this full sample, none of the participants were removed, as detailed below.

**Procedure.** Participants signed up online for an experimental session, with a maximum of 12 participants per session. Upon arriving at the testing room, participants were given a consent form and asked to carefully read over, sign, and return it to the research assistant. Once consent forms were returned, participants were given a copy of the manipulation materials for the condition they had been randomly assigned to (random assignment was accomplished through random shuffling of the experimental materials package described below). After reading over the text and responding to the manipulation related questions, participants completed measures assessing hedonic and eudaimonic well-being as well as demographic questions. The well-being measures were counterbalanced such that all eight of the experimental conditions received alternating eudaimonic and well-being measures (i.e., eudaimonic, hedonic, eudaimonic, hedonic).

Lastly, participants completed a final manipulation check assessing motivation focus and a suspicion check. Completion of the manipulation materials and questionnaires was limited to one hour. Participants were provided with a written debriefing upon completion of the study. This procedure was granted clearance by the Brock University Research Ethics Board (see Appendix 12).

**Manipulation and Materials.** A 2 x 2 x 2 between-subjects experimental design was used, manipulating the three pairs of motivational constructs (intrinsic vs. extrinsic, approach vs. avoidance, eudaimonic vs. hedonic). Consistent with previous empirical research, the manipulation highlighted intrinsic versus extrinsic sources of one's goals (e.g., Weinstein & Hodgins, 2009), approach versus avoidant strategies for achieving one's goals (e.g., Matthews & Shook, 2013), and eudaimonic versus hedonic outcomes desired through one's goals (e.g., Huta & Ryan, 2010). To do so, participants were randomly assigned to one of eight experimental conditions, with each condition representing one of eight combinations of the three pairs of motivational constructs: intrinsic/approach/eudaimonic, intrinsic/approach/hedonic, intrinsic/avoidance/eudaimonic, intrinsic/avoidance/hedonic, extrinsic/approach/eudaimonic, extrinsic/approach/hedonic, extrinsic/avoidance/eudaimonic, and extrinsic/avoidance/hedonic.

Participants in each condition were exposed to a three-part manipulation aimed at priming the various combinations of motivation constructs at the goal level. Part 1 was a one-page narrative describing an individual's life that was designed to shift participants' motivational focus to their respective experimental condition using words associated with the motivational constructs comprising each respective condition (see Appendix 13.1 for

each of the eight manipulation narratives). In order to ensure that the narrative passage was relevant to participants' lives, the content of the narratives was based on life events and transitions that are considered to be typical for young adults (e.g., Rubin, Bernsten, & Hutson, 2009). In each condition, five statements were made about the fictional subject's current goals and activities. Each statement contains three primes—one corresponding to each pair of motivational constructs. Thus, the same number of words for each primed construct were used, the priming words appeared in the same places in the text, and the stories were identical between conditions other than the specific priming words associated with each construct. See Table 12 for a summary of the priming words used for each of the six goal motivation constructs.

In Part 2 of the manipulation, three two-part questions were posed to the participant, with one question corresponding to each pair of motivational constructs (intrinsic versus extrinsic, approach versus avoidance, eudaimonic versus hedonic; see Appendix 13.2 for an example relevant to each condition). In each question, participants were first asked a true or false question about the source of the narrative character's goals (intrinsic versus extrinsic; Question 1), the strategy she had for reaching her goals (approach versus avoidance; Question 2), and the outcome she desired from her goals (eudaimonic versus hedonic; Question 3). This served as a manipulation check, ensuring participants had processed and understood the story in the way it was intended. Each question then asked the participant to give an example of one of their *own* goals that is similar to the narrative character's with respect to the source (question 1), the strategy (question 2), or the outcome desired (question 3). This served as a transition from

focusing on the narrative character to themselves, requiring participants to consider how the relevant motivational constructs applied to their own lives.

Table 12

*Motivational Constructs and Associated Priming Words*

Motivational Construct	Priming Words
Intrinsic	She chose to She wants to She values Personally valuable reasons She feels it is right to
Extrinsic	She feels pressure to People say she should Society values those who Socially desirable She feels external pressure to
Approach	Strive towards Working towards Working on developing Achieving Pursuing success
Avoidance	Avoid Staying away from Avoid losing Steering clear of Playing it safe
Eudaimonic	Purpose Fulfilling Meaningful Seeking fulfillment
Hedonic	Contentment Enjoyable Satisfying Seeking satisfaction

In Part 3 of the manipulation, participants were prompted through written instruction to list personal goals relevant to their condition, one construct at a time, in an open-ended manner (see Appendix 13.3). Part 3 thus ensured that participants *could* list types of goals, and *were* thinking about goals, associated with their condition prior to completing the well-being measures. For example, when prompted to list avoidance goals, participants read, “Please think about goals that involve trying to avoid something. Please take a few moments to think about these kinds of goals and then in the space provided below please list up to 5 goals that involve you avoiding something.” The order of the three goals lists in each experimental condition was counterbalanced across participants within each experimental condition (see Appendix 13.3 for the list instructions for each of the eight types of lists).

### **Measures.**

***Hedonic well-being.*** The *Scale of Positive and Negative Experience* (SPANE; Diener et al., 2009; see Appendix 8) was used to measure the frequency of an individual’s positive and negative affective experiences (Cronbach’s  $\alpha = .81$  and  $.79$ , respectively) and the *Satisfaction with Life Scale* (SWLS; Diener et al., 1985; see Appendix 9) was used to assess overall life satisfaction (Cronbach’s  $\alpha = .86$ ); see Study 1 for details. A composite hedonic well-being score was computed by standardizing the life satisfaction, positive affect, and negative affect (reverse-scored) values, then averaging across the three measures; higher scores indicated higher hedonic well-being.

***Eudaimonic well-being.*** The 18-item *Scales of Psychological Well-Being* (PWB; Ryff 1989; Ryff & Keyes, 1995; see Appendix 10) and the 21-item *Questionnaire for Eudaimonic Well-Being* (QEWB; Waterman et al., 2010; see Appendix 11) were

employed; see Study 1 for details. Cronbach's  $\alpha$ 's = .81 and .80 for the PWB and QEWB, respectively. A composite eudaimonic well-being variable was computed by standardizing scores, then averaging across the two measures; higher scores indicated higher eudaimonic well-being.

***Manipulation check.*** Part 2 (i.e., true and false questions concerning the narrative) and Part 3 (i.e., participants' three goals lists) of the manipulation were dual-purpose, serving both as part of the manipulation, designed to strengthen the motivational state primed by the narrative, and as manipulation checks. True and false responses from Part 2 were analyzed to ensure that participants had understood the priming material (indicated by selecting "True" when asked to answer questions about the narrative character's goals). Responses from Part 3 of the manipulation were coded by a research assistant (and checked by the author of this thesis) and analyzed to ensure that participants had understood the priming material (i.e., goal list instructions), and had responded to their goal lists appropriately for each of the three constructs relevant to their condition. Immediately following the well-being questionnaires, participants also completed a one page manipulation check asking them the extent to which they were focusing on each of the goal pairings when completing the previous measures. Question 1 assesses intrinsic versus extrinsic goal focus, Question 2 assesses approach versus avoidance goal focus, and Question 3 assesses eudaimonic versus hedonic goal focus. Appendix 14 contains these questions for each of the eight conditions. Results from this manipulation check were analyzed using three *t* tests (one for each of the three questions) per independent variable (i.e., approach vs. avoidance condition, intrinsic vs. extrinsic condition, eudaimonic vs. hedonic condition) in order to confirm participants reported

focusing on the motivation constructs most relevant to their condition (i.e., individuals in the approach compared to the avoidance condition reported greater approach vs. avoidance focus).

***Suspicion check.*** The study concluded with a two-question suspicion check, asking participants 1) what they thought the purpose of the study was, and 2) what they thought the researchers were hoping to find (see Appendix 15). Suspicion was defined as stating a contrast between the constructs associated with at least one pair of motivational variables and some aspect of well-being (i.e., that those with intrinsic goals will have greater well-being than those with extrinsic goals) and/or being suspicious of the design of the study (i.e., having various groups receive different manipulations). Participants who did not report any suspicion were coded as “0” ( $n = 408$ ), and participants who reported being suspicious were coded as “1” ( $n = 39$ ), to allow for comparison between these two groups. These groups were compared based on the standardized composite well-being scores (described below), as well as on the three manipulation check (focus) questions described above using independent samples  $t$  tests. All of these  $t$  tests were non-significant ( $ps > .05$ ) and all subsequent analyses were based on the full sample of 447 respondents.

## **Results**

### ***Preliminary analysis.***

***Distributions and outliers.*** Descriptive statistics for and correlations among the well-being variables and their composites are shown in Table 13. Composite scores were calculated only for cases with a minimum of 50% of the data (i.e., scale item ratings) for each respective target variable. None of the cases were dropped from analysis on the



basis of incomplete data. Consequently, all analyses were based on the full sample, with the exception of the life satisfaction measure, for which responses for one participant were missing; consequently, analyses involving this particular variable were based on 446 respondents, rather than the full sample of 447. Examination of the distributions revealed that the study variables met the assumptions necessary for data analysis. There were a small number of univariate outliers across analysis variables as indicated by z-scores  $> +$  or  $< -3$ . However, there were no influential multivariate outliers identified in the data set, as indicated by Cook's Distance values  $> 1$ , for all participants in each of the ANOVA analyses described below. Thus, no cases were dropped from the analysis on the basis of extreme scores. The final analysis sample consisted of all 447 cases.

Table 13

*Descriptive Statistics and Correlations Among Well-Being Variables*

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
Hedonic well-being									
1. SWLS	4.52	1.20	--						
2. PA	3.83	.55	.56*	--					
3. NA	2.47	.68	-.50*	-.57*	--				
Eudaimonic well-being									
4. PWB	4.55	.56	.55*	.57*	-.53*	--			
5. QEWB	2.66	.44	.51*	.42*	-.40*	.68*	--		
Composites									
6. HWB	.00	1.00	.82*	.85*	-.83*	.66*	.53*	--	
7. EWB	.00	1.00	.58*	.54*	-.51*	.92*	.92*	.65*	--

*Note.*  $N = 447$ , for all variables except SWLS ( $N = 446$ ). SWLS = Satisfaction With Life Scale; PA = Positive affect subscale (from the Scale of Positive and Negative Experience); NA = Negative affect subscale (from the Scale of Positive and Negative Experience); PWB = Scales for Psychological Well-Being; QEWB = Questionnaire for Eudaimonic Well-Being; HWB = Hedonic well-being; EWB = Eudaimonic well-being. \* $p < .05$ .

***Exploratory factor analysis of well-being indicators.*** An exploratory factor analysis (principal axis factoring method) was conducted on the five well-being measures in order to confirm that the variables used to represent each type of well-being (eudaimonic and hedonic) were empirically distinct groupings, as anticipated. The analysis produced one large factor (eigenvalue greater than 1.00). As shown in Table 14, Factor 1 had strong positive loadings from the SWLS, PA, QEWB, and PWB measures, and a strong negative loading from the NA measure. However, this analysis also revealed a sizeable residual correlation between the two EWB indicators.

Table 14

*Results from Exploratory Factor Analyses of Well-Being Variables*

Measure	One factor extracted	Two factors extracted	
	Factor 1	Factor 1	Factor 2
Hedonic			
SWLS	.72	.56	.20
PA	.73	.86	-.08
NA	-.67	-.70	-.01
Eudaimonic			
QEWB	.69	-.03	.90
PWB	.83	.38	.52

*Note.*  $N = 447$ . SWLS = Satisfaction With Life Scale; PA = Positive affect subscale (Scale of Positive and Negative Experience); NA = Negative affect subscale (from the Scale of Positive and Negative Experience); PWB = Scales for Psychological Well-Being; QEWB = Questionnaire for Eudaimonic Well-Being. Standardized factor loadings after oblique rotation are shown.

Thus, a two factor solution (using principal axis factoring) was also examined. As shown in Table 14, following oblique rotation, Factor 1 had strong positive loadings from the SWLS and PA measures, and a strong negative loading from the NA measure, in combination with moderate to weak loadings from two eudaimonic well-being measures.

Factor 2 had strong positive loadings from the QEWB and PWB measures, along with weak loadings from each of the three hedonic well-being measures. The estimated correlation between factors was .67. These results are consistent with the standard conceptualization of hedonic and eudaimonic well-being as related but distinct types of well-being (Keyes et al., 2002). Thus, in all subsequent analyses, well-being was assessed as two separate concepts, using standardized composite scores consisting of the measures representing each variable described above (i.e., SWLS, PA, and reverse-scored NA for hedonic well-being; PWB and QEWB for eudaimonic well-being).

***Manipulation check.***

*Comprehension.* In order to confirm comprehension of the priming narrative, the three true and false responses from Part 2 of the experimental manipulation were coded as zero for “false” and one for “true”. These responses were summed to create a new variable representing each participant’s comprehension score. Given the answer for each of three questions relevant to the participants’ condition were true, a score of three would indicate perfect comprehension, a score of two would indicate good comprehension, a score of one would indicate poor comprehension, and a score of zero would indicate a complete lack of comprehension concerning the priming narrative. Of the 447 participants, 14 had a comprehension score below the cut-off of two (12 had a score of one, and two had a score of zero). To assess if the lack of comprehension displayed by these participants may have subsequently influenced their responses on the outcome measures, standardized scores on the hedonic and eudaimonic well-being composite variables were examined. None of the 14 participants with comprehension scores below the cut-off had standardized scores  $> +$  or  $< -3$  for hedonic, or eudaimonic, well-being—

indicating the lack of comprehension displayed did not subsequently lead to extreme scores on the outcome variables. Further, results from two  $t$  tests indicated that there were no significant mean differences between those who displayed a lack of comprehension ( $n = 14$ ) and the rest of the sample ( $n = 443$ ) for hedonic,  $t(445) = .006$ ,  $p = .995$ , or eudaimonic,  $t(445) = -1.11$ ,  $p = .268$ , well-being.

*Goal list violations.* Based on the coding from Part 3 of the experimental manipulation, participants were categorized into one of two groups: No violations or problems with their goal lists (i.e., all of the participants goals listed were consistent with the experimental instructions;  $n = 430$ ) or some indication of a goal-list violation (i.e., at least one of the goals listed by the participant was not consistent with the experimental instructions;  $n = 17$ ). To assess if goal violations displayed by these participants may have subsequently influenced their responses on the outcome measures, standardized scores on the hedonic and eudaimonic well-being composite variables were examined. None of the 17 participants in the goal violation group had standardized scores  $> +$  or  $< -3$  for hedonic, or eudaimonic, well-being. Further, results from two  $t$  tests indicated that there were no significant mean differences between those in the goal violation versus no goal violation groups for hedonic,  $t(445) = 1.52$ ,  $p = .283$ , or eudaimonic,  $t(445) = 2.37$ ,  $p = .331$ , well-being. Thus, none of the participants were removed from further analysis on the basis of comprehension or goal-list violations.

*Goal focus.* In order to confirm that participants focused on the motivation constructs most relevant to their condition, results from the manipulation check questions asking participants the extent to which they were focusing on each of the goal pairings (intrinsic/extrinsic, approach/avoidance, and eudaimonic/hedonic) were analyzed using

three  $t$  tests (one for each of the three manipulation check questions as the dependent variable) per independent variable, representing one of the three goal-pairing conditions (i.e., approach vs. avoidance condition, intrinsic vs. extrinsic condition, eudaimonic vs. hedonic condition). Means for each manipulation check question are shown by condition in Table 15.

Table 15

*Means for Manipulation Check Questions by Experimental Condition*

Condition	Dependent variable		
	Extrinsic vs. intrinsic goal focus	Avoidance vs. approach goal focus	Hedonic vs. eudaimonic goal focus
Extrinsic vs. intrinsic	3.47 vs. 3.67*	4.00 vs 4.10	3.25 vs. 3.13
Avoidance vs. approach	3.52 vs. 3.61	3.90 vs. 4.21*	3.15 vs. 3.23
Hedonic vs. Eudaimonic	3.63 vs. 3.50	4.06 vs. 4.05	3.12 v. 3.26*

*Note.* \* $p < .05$ .

For individuals in the intrinsic versus extrinsic conditions there was a significant mean difference in the degree of focus on intrinsic versus extrinsic goals,  $t(445) = -2.47$ ,  $p = .014$ , such that individuals in the intrinsic conditions reported significantly greater focus on intrinsic goals than did individuals in the extrinsic conditions. Individuals in the intrinsic and extrinsic conditions did not, however, differ significantly in their reported focus on approach versus avoidance goals,  $t(445) = -1.41$ ,  $p = .159$ , or eudaimonic versus hedonic goals,  $t(445) = 1.57$ ,  $p = .116$ . These results suggest that the intrinsic versus extrinsic manipulation shifted participants' focus on intrinsic versus extrinsic goals, as

intended, but had no significant bearing on participants' motivational focus with respect to approach versus avoidance and eudaimonic versus hedonic goals.

For individuals in the approach versus avoidance conditions there was a significant difference in focus on approach versus avoidance goals,  $t(445) = -4.57, p < .001$ , such that individuals in the approach conditions reported significantly greater focus on approach goals than did individuals in the avoidance conditions. Individuals in the approach and avoidance conditions did not, however, differ significantly in their reported focus on intrinsic versus extrinsic goals,  $t(445) = -1.07, p = .284$ , or eudaimonic versus hedonic goals,  $t(445) = -1.07, p = .288$ . These results suggest that the approach versus avoidance manipulation shifted participants' focus on approach versus avoidance goals, as intended, but had no significant bearing on participants' motivational focus with respect to intrinsic versus extrinsic and eudaimonic versus hedonic goals.

Lastly, for individuals in the eudaimonic versus hedonic conditions there was a significant difference in focus on eudaimonic versus hedonic goals,  $t(445) = -2.09, p = .004$ , such that individuals in the eudaimonic conditions reported a significantly greater focus on eudaimonic goals than individuals in the hedonic conditions. Individuals in the eudaimonic and hedonic groups did not, however, differ significantly in their reported focus on intrinsic versus extrinsic goals,  $t(445) = 1.58, p = .115$ , or approach versus avoidance goals,  $t(445) = 1.31, p = .896$ . These results suggest that the eudaimonic versus hedonic manipulation shifted participants' focus on eudaimonic versus hedonic goals, as intended, but had no significant bearing on participants' motivational focus with respect to intrinsic versus extrinsic and approach versus avoidance goals.

### **Main analysis.**

*Effect of experimental condition on eudaimonic and hedonic well-being.* The main goal of Study 2 was to determine if manipulating each of the three pairs of goal-level motivational constructs impacts eudaimonic and hedonic well-being. It was hypothesized that the goal-level manipulations would result in corresponding shifts in participants' motivational focus and therefore induce the effects on each type of well-being associated with the particular goal-level motivational construct, as summarized in Table 2 (Hypothesis 1). Specifically, it was hypothesized that hedonic well-being would be higher in the intrinsic compared to the extrinsic condition, higher in the approach compared to the avoidance condition, and higher in the hedonic compared to the eudaimonic condition (Hypothesis 1A). Further, it was predicted that eudaimonic well-being would be higher in the intrinsic compared to the extrinsic condition, higher in the approach compared to the avoidance condition, and higher in the eudaimonic compared to the hedonic condition (Hypothesis 1B). It was also expected that motivational concepts that have similar individual associations with well-being would interact, thus amplifying their respective effects on well-being (Hypothesis 2). More specifically, it was expected that individuals assigned to the intrinsic, approach, and eudaimonic condition would have the highest level of hedonic (Hypothesis 2A) and eudaimonic (Hypothesis 2B) well-being compared to all other conditions.

In order to assess these hypotheses, the main effects and interactions from two 2 x 2 x 2 factorial ANOVAs were analyzed, with the three pairs of motivational constructs (intrinsic/extrinsic, approach/avoidance, and eudaimonic/hedonic) as between-subjects independent variables and eudaimonic (model 1) and hedonic (model 2) well-being as

dependent variables. Note that means for the main effect of the each of the three pairs of motivation concepts on each type of well-being are shown in Table 16, and means for eudaimonic and hedonic well-being are shown by each of the eight experimental conditions in Table 17.

Table 16

*Estimated Marginal Means for Main Effects of Each of the Three Pairs of Motivation Concepts on Hedonic and Eudaimonic Well-Being*

Condition	Dependent variable	
	Hedonic Well-Being	Eudaimonic Well-Being
Extrinsic vs. intrinsic	-.01 vs .01	-.08 vs .08
Avoidance vs. approach	-.08 vs .08	-.05 vs .05
Hedonic vs. Eudaimonic	-.04 vs .03	-.02 vs .02

Table 17

*Means and Standard Deviations for Hedonic and Eudaimonic Well-Being by Experimental Condition*

Condition	<i>n</i>	Well-Being Type	
		Hedonic <i>M (SD)</i>	Eudaimonic <i>M (SD)</i>
Intrinsic, Approach, Eudaimonic	56	.09 (.80)	.17 (1.00)
Intrinsic, Approach, Hedonic	56	.06 (.85)	.03 (.76)
Intrinsic, Avoidance, Eudaimonic	56	-.02 (.91)	.14 (.86)
Intrinsic, Avoidance, Hedonic	55	-.09 (.78)	-.07 (.89)
Extrinsic, Approach, Eudaimonic	56	.06 (.75)	-.03 (1.02)
Extrinsic, Approach, Hedonic	56	.05 (.87)	-.01 (.98)
Extrinsic, Avoidance, Eudaimonic	56	-.02 (.89)	-.23 (.86)
Extrinsic, Avoidance, Hedonic	56	-.14 (.82)	.00 (.93)



None of the three pairs of manipulated motivational constructs (intrinsic/extrinsic, approach/avoidance, eudaimonic/hedonic) had statistically significant main effects on hedonic well-being (see Table 18). Further, none of the interactions had statistically significant effects on hedonic well-being. In addition, in a planned comparison, individuals in the intrinsic, approach, eudaimonic condition ( $n = 56$ ) were compared to participants in all other conditions ( $n = 391$ ) with respect to hedonic well-being. The difference between groups was non-significant,  $t(445) = -0.90$ ,  $p = .370$ . Thus Hypothesis 1A and Hypothesis 2A were not supported.

Similarly, none of the three pairs of motivational constructs (intrinsic/extrinsic, approach/avoidance, eudaimonic/hedonic) had statistically significant main effects or interaction effects on eudaimonic well-being (see Table 18). Further, in a planned comparison, the difference in eudaimonic well-being between individuals in the intrinsic, approach, eudaimonic condition and participants in all other conditions was non-significant,  $t(445) = -1.51$ ,  $p = .131$ . Thus Hypothesis 1B and Hypothesis 2B were not supported.

***Effect of experimental condition on eudaimonic versus hedonic well-being.***

With respect to the relative magnitudes of the main effects of the manipulated motivational goal construct pairings on the two types of well-being, differences between the intrinsic versus extrinsic conditions were predicted to be larger for eudaimonic than for hedonic well-being; differences between the approach versus avoidance conditions were expected to be comparable for hedonic and eudaimonic well-being; and differences between the hedonic versus eudaimonic conditions were expected to be comparable for hedonic and eudaimonic well-being (Hypothesis 1C). With respect to the anticipated

Table 18

*Results from 2 x 2 x 2 ANOVA Main Effects and Interactions of Experimental Conditions on Hedonic and Eudaimonic Well-Being*

Main effects and interactions	Hedonic Well-Being			Eudaimonic Well-Being		
	<i>F</i>	<i>p</i>	$\eta_p^2$	<i>F</i>	<i>p</i>	$\eta_p^2$
<i>Main effects</i>						
Extrinsic/Intrinsic	.05	.821	.000	2.53	.112	.006
Avoidance/Approach	2.86	.091	.006	.92	.339	.002
Hedonic/Eudaimonic	.53	.469	.001	.10	.754	.000
<i>2-way interactions</i>						
Extrinsic/Intrinsic x Avoidance/Approach	.00	.999	.000	.03	.858	.000
Extrinsic/Intrinsic x Hedonic/Eudaimonic	.01	.939	.000	2.95	.087	.007
Avoidance/Approach x Hedonic/Eudaimonic	.22	.641	.000	.19	.665	.000
<i>3-way interaction</i>						
	.07	.788	.000	.70	.402	.002

*Note.* For each effect tested, *dfs* = 1, 439.

interactions among the manipulated motivational goal constructs pairings, it was expected that for participants in the combined intrinsic, approach, and eudaimonic goals condition, eudaimonic well-being would be higher than hedonic well-being (Hypothesis 2C).

In order to assess these hypotheses, the main effects and interactions from a 2 x 2 x 2 x 2 mixed-model ANOVA were analyzed, with three between-subjects factors (intrinsic/extrinsic, approach/avoidance, eudaimonic/hedonic), and one within-subjects factor (eudaimonic well-being/hedonic well-being). Two-way interactions of each of the three between-subjects factors and the within-subjects factor were examined to determine if the main effects of the motivational construct pairings on well-being differed between eudaimonic and hedonic well-being. None of these two-way interactions were statistically significant (see Table 19). Further, the four-way interaction was also non-significant. In addition, in a planned comparison, the difference between hedonic versus eudaimonic well-being did not vary as a function of whether participants were in the combined intrinsic, approach, and eudaimonic goals condition versus all other conditions;  $F(1, 445) = 0.54, p = .463$ . Thus, Hypothesis 1C and Hypothesis 2C were not supported.

Note, however, there was one statistically significant three-way interaction between intrinsic/extrinsic, eudaimonic/hedonic, and well-being type,  $F(1, 439) = 4.65, p = .032$ . In order to further assess this three-way interaction, two two-way ANOVA's were conducted for individuals in the hedonic and eudaimonic conditions separately, wherein the interaction between extrinsic versus intrinsic condition and well-being type (hedonic versus eudaimonic) was examined. The interaction was not significant for individuals in the hedonic condition,  $F(1, 221) = 0.15, p = .702$ , but *was* significant for individuals in

Table 19

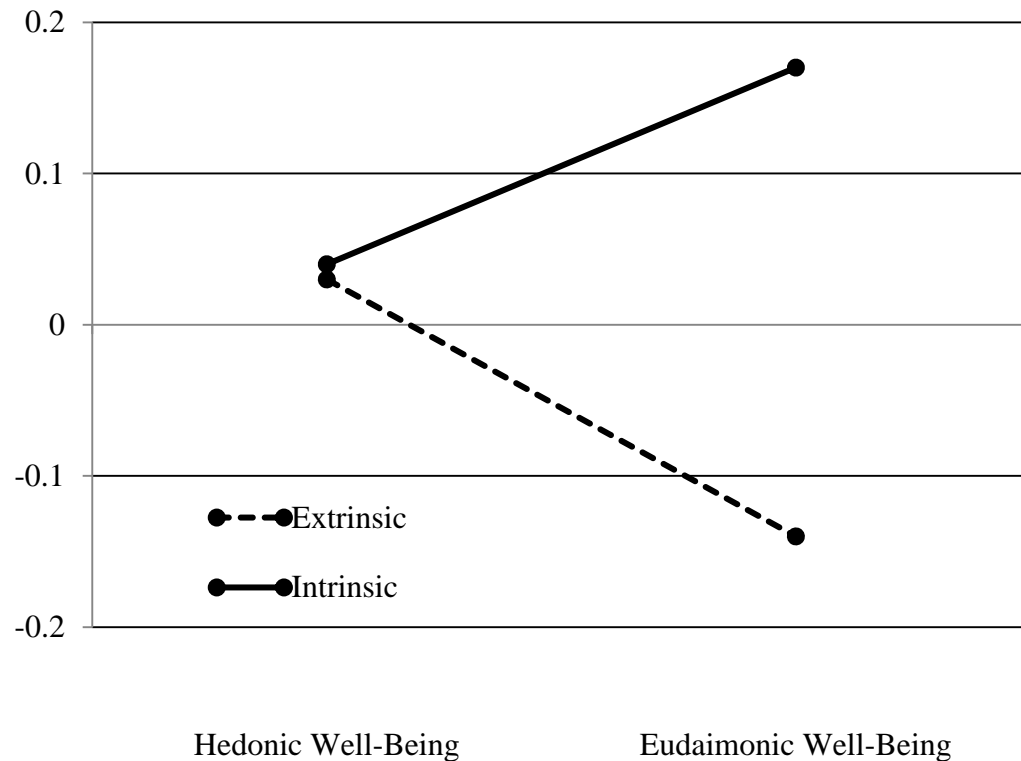
*Results from 2 x 2 x 2 x 2 ANOVA Main Effects and Interactions of Experimental Conditions and Well-Being Type on Well-Being*

Main effects and interactions	<i>F</i>	<i>p</i>	$\eta_p^2$
<i>Main effects</i>			
Extrinsic/Intrinsic	1.00	.319	.002
Avoidance/Approach	2.12	.146	.005
Hedonic/Eudaimonic	.33	.568	.001
HWB/EWB	.00	.999	.000
<i>2-way interactions</i>			
Extrinsic/Intrinsic x Avoidance/Approach	.01	.921	.000
Extrinsic/Intrinsic x Hedonic/Eudaimonic	.81	.369	.002
Avoidance/Approach x Hedonic/Eudaimonic	.00	.985	.000
HWB/EWB x Extrinsic/Intrinsic	2.69	1.02	.006
HWB/EWB x Avoidance/Approach	.79	.374	.002
HWB/EWB x Hedonic/Eudaimonic	.25	.619	.001
<i>3-way interactions</i>			
Extrinsic/Intrinsic x Avoidance/Approach x Hedonic/Eudaimonic	.10	.755	.000
HWB/EWB x Extrinsic/Intrinsic x Avoidance/Approach	.05	.831	.000
HWB/EWB x Extrinsic/Intrinsic x Hedonic/Eudaimonic	4.65	.032	.010
HWB/EWB x Avoidance/Approach x Hedonic/Eudaimonic	1.18	.279	.003
<i>4-way interaction</i>	1.77	.184	.004

*Note.* For each effect tested, *dfs* = 1, 439.

the eudaimonic condition,  $F(1, 222) = 6.66, p = .010$ , indicating that for individuals in the eudaimonic, but not hedonic, conditions, well-being differed depending on whether or not individuals also received the intrinsic versus extrinsic manipulation. See Figure 1 for a means plot of this two-way interaction.

**Figure 1.** Two-Way Interaction of Extrinsic versus Intrinsic Condition and Well-Being Type for Individuals in the Eudaimonic Experimental Conditions



*Figure 1.* Display of two-way interaction of extrinsic versus intrinsic condition and well-being type (hedonic vs. eudaimonic) for individuals in the eudaimonic experimental conditions. Type of well-being (repeated measure) is shown on the x-axis by extrinsic (dashed line) versus intrinsic (solid line) condition.

In follow-up simple effects analyses among individuals in the eudaimonic conditions, there was a significant simple effect of WB type for individuals in the extrinsic condition (wherein eudaimonic well-being was significantly lower than hedonic well-being;  $M_s = -0.14$  vs.  $0.03$ , respectively,  $p = .04$ ) but not in the intrinsic condition ( $M_s = 0.17$  vs.  $0.04$ , respectively,  $p = .11$ ). Further, there was a significant simple effect

of extrinsic versus intrinsic motivation condition for eudaimonic well-being (wherein eudaimonic well-being was significantly higher in the intrinsic vs. extrinsic conditions;  $p = .02$ ) but not for hedonic well-being ( $p = .92$ ). Note that although this interaction was not specified in the study hypotheses, it is consistent with the predictions stated in Hypothesis 2C. Specifically, that individuals in the eudaimonic, intrinsic, and approach conditions would have the highest well-being compared to other conditions, and that eudaimonic well-being would be higher than hedonic well-being.

### **Follow-up analyses.**

Given that the results associated with main study hypotheses produced little support for my predictions, follow-up analyses were conducted in order to better evaluate whether the experimental manipulations impacted eudaimonic and hedonic well-being indirectly, through participants' motivational focus, as conveyed by their responses to the manipulation check questions.

***Experimental condition predicting motivational focus.*** I conducted three hierarchical regressions to assess whether experimental condition (main effects and interactions) predicted each of the three motivational focus questions. Each of the three motivational focus questions was regressed onto the experimental condition codes (step 1), the two-way interactions of experimental condition (step 2), and the three-way interaction of experimental conditions (step 3). As shown in Table 20, the experimental conditions (extrinsic versus intrinsic, avoidance versus approach, hedonic versus eudaimonic) and their interactions, explained 3% of the variance in extrinsic versus intrinsic motivational focus. Of the experimental condition predictors, only the extrinsic versus intrinsic condition predicted significant unique variability in extrinsic versus

Table 20

*Hierarchical Multiple Regression Results for Experimental Condition Predicting Motivational Focus*

Condition	Motivational Focus								
	Extrinsic vs. Intrinsic			Avoidance vs. Approach			Hedonic vs. Eudaimonic		
	$\beta 1$	$\beta 2$	$\beta 3$	$\beta 1$	$\beta 2$	$\beta 3$	$\beta 1$	$\beta 2$	$\beta 3$
E vs. I	.12*	.18*	.13	.07	-.09	-.11	-.08	-.12	-.18
Av vs. Ap	.05	.08	.03	.21*	.19*	.17	.05	.11	.05
H vs. E	-.08	-.10	-.15	-.01	-.14	-.16	.10*	.04	-.02
E vs. I x Av vs. Ap		-.10	-.02		.04	.08		-.07	.04
E vs. I x H vs. E		-.01	.08		.23*	.26*		.14	.25*
Av vs. Ap x H vs. E		.05	.14		.00	.03		-.04	.07
3-way interaction			-.13			-.05			-.17
$R^2$	.02*	.03	.03	.05*	.07*	.07*	.02*	.03	.03
Change in $R^2$		<.01	<.01		.02*	<.01		.01	<.01

*Note.*  $N = 447$ .  $\beta 1$  = standardized regression coefficients at Step 1.  $\beta 2$  = standardized regression coefficients at Step 2.  $\beta 3$  = standardized regression coefficients at Step 3. E vs. I = Extrinsic vs. Intrinsic, Av vs. Ap = Avoidance vs. Approach, H vs. E = Hedonic vs. Eudaimonic. \*  $p < .05$ .

intrinsic motivational focus. This significant predictive effect was present at steps 1 and 2—but not step 3—of the regression model. More specifically, being in the intrinsic, compared to the extrinsic condition, predicted greater focus on intrinsic goals. These results are consistent with the manipulation check predictions. None of the two-way, or the three-way, interaction(s), accounted for significant unique variability in extrinsic versus intrinsic motivational focus.

Additionally, the experimental conditions and their interactions explained 7% of the variance in avoidance versus approach motivational focus (see Table 20). Of the three experimental condition predictors, only the avoidance versus approach conditions predicted significant unique variability in avoidance versus approach motivational focus. This significant predictive effect was present at steps 1 and 2—but not step 3—of the regression model. More specifically, being in the approach, compared to the avoidance, condition predicted greater focus on approach goals. These results are consistent with the manipulation check predictions. Further, of the three two-way experimental condition interaction variables, the variable representing the extrinsic versus intrinsic and hedonic versus eudaimonic conditions interaction was a significant, unique predictor of avoidance versus approach motivational focus at steps 2 and 3 (see Table 20). More specifically, being in the intrinsic, compared to extrinsic, condition predicted significantly greater focus on approach goals among individuals also in the eudaimonic (versus hedonic condition). The three-way interaction of experimental conditions did not account for significant unique variability in avoidance versus approach motivational focus.

Lastly, as shown in Table 20, the experimental conditions and their interactions explained 3% of the variance in hedonic versus eudaimonic motivational focus. Of the



experimental condition predictors, only the hedonic versus eudaimonic condition predicted significant unique variability in hedonic versus eudaimonic motivational focus. This predictive effect was significant only at step 1 of the regression model. More specifically, being in the eudaimonic, compared to the hedonic, condition predicted greater focus on eudaimonic goals. These results are consistent with the manipulation check predictions. Further, of the three two-way experimental condition interactions, the extrinsic versus intrinsic and hedonic versus eudaimonic conditions interaction was a significant, unique predictor of hedonic versus eudaimonic motivational focus at step 3 (see Table 20). More specifically, being in the intrinsic, compared to extrinsic, condition predicted significantly greater focus on eudaimonic goals among individuals also in the eudaimonic (versus hedonic condition). The three-way interaction of experimental conditions did not account for significant unique variability in hedonic versus eudaimonic motivational focus.

***Motivational focus predicting hedonic and eudaimonic well-being.*** I also conducted two hierarchical regressions to assess whether the three motivational focus questions (main effects and interactions) predicted each type of well-being. Hedonic and eudaimonic well-being were regressed onto the three motivational focus questions (step 1), the two-way interactions of motivational focus (step 2), and the three-way interaction of motivational focus (step 3). As shown in Table 21, the motivational focus variables (extrinsic versus intrinsic, avoidance versus approach, hedonic versus eudaimonic) and their interactions explained 6% of the variance in hedonic well-being. Of the predictors, extrinsic versus intrinsic, and avoidance versus approach motivational focus predicted significant unique variability in hedonic well-being at all three steps of the regression

Table 21

*Hierarchical Multiple Regression Results for Motivational Focus Predicting Well-Being*

Motivational focus	Well-Being Type					
	Hedonic			Eudaimonic		
	$\beta 1$	$\beta 2$	$\beta 3$	$\beta 1$	$\beta 2$	$\beta 3$
E vs. I	.10*	.11*	.11*	.24*	.25*	.25*
Av vs. Ap	.19*	.18*	.18*	.24*	.24*	.24*
H vs. E	.01	.01	.01	-.01	-.02	-.02
E vs. I x Av vs. Ap		-.05	-.04		-.06	-.07
E vs. I x H vs. E		.01	.01		.04	.04
Av vs. Ap x H vs. E		.05	.05		-.02	-.03
3-way interaction			-.01			.03
$R^2$	.06*	.06*	.06*	.14*	.15*	.15*
Change in $R^2$		<.01	<.01		.01	<.01

*Note.*  $N = 447$ . B1 = standardized regression coefficients at Step 1. B2 = standardized regression coefficients at Step 2. B3 = standardized regression coefficients at Step 3. E vs. I = Extrinsic vs. Intrinsic, Av vs. Ap = Avoidance vs. Approach, H vs. E = Hedonic vs. Eudaimonic. \*  $p < .05$ .

model. More specifically, greater hedonic well-being was predicted by greater focus on intrinsic, compared to extrinsic, goals and greater focus on approach, compared to avoidance, goals. These results support Hypothesis 1A, according to which greater intrinsic focus and greater approach focus should predict greater hedonic well-being. None of the two-way, or the three-way, interaction(s), accounted for significant unique variability in hedonic well-being.

Also shown in Table 21, the motivation focus variables and their interactions explained 15% of the variance in eudaimonic well-being. Of the predictors, extrinsic versus intrinsic, and avoidance versus approach motivational focus predicted significant unique variability in eudaimonic well-being at all three steps of the regression model. More specifically, greater eudaimonic well-being was predicted by greater focus on intrinsic, compared to the extrinsic goals, and greater focus on approach, compared to avoidance goals. These results support Hypothesis 1B, according to which greater intrinsic focus and greater approach focus should predict greater eudaimonic well-being. However, none of the two-way, or the three-way, interaction(s), accounted for significant unique variability in eudaimonic well-being.

Lastly, the (unstandardized) regression coefficients for these significant effects were compared across outcomes at step 1, to test for differences in predictive strength concerning hedonic and eudaimonic well-being. Whereas extrinsic versus intrinsic motivational focus was a stronger predictor of eudaimonic, than of hedonic, well-being ( $p < .05$ ), avoidance versus approach motivational focus showed no significant difference in its predictive effect on the two types of well-being ( $p > .05$ ).

***Experimental condition and motivational focus predicting hedonic and eudaimonic well-being.*** Given that the experimental conditions are predictive of motivational focus, and that two of the motivational focus variables were predictive of hedonic and eudaimonic well-being, experimental condition may be predictive of well-being indirectly, through motivational focus. To test this possibility, I conducted a path analysis with the three experimental condition dummy codes (extrinsic vs. intrinsic, avoidance vs. approach, hedonic vs. eudaimonic) predicting each of the three motivational focus variables (extrinsic vs. intrinsic, avoidance vs. approach, hedonic vs. eudaimonic), and all of the experimental condition and motivational focus variables predicting both hedonic and eudaimonic well-being (see Figure 2). The experimental condition dummy codes were specified to be correlated with one another (to address the slightly unbalanced cell counts; see Table 17), as were the residuals for the three motivational focus variables, and the two well-being variables. This created a saturated model ( $df = 0$ ), providing perfect fit to the data. Note that bootstrapping ( $n = 1000$  samples) was used to obtain p-value estimates for the standardized direct and indirect effects.

The standardized direct predictive effects of experimental condition on motivational focus, and motivational focus on hedonic and eudaimonic well-being were consistent with the results of the hierarchical regressions discussed in the previous two sections of the follow-up analyses (see step 1, Tables 20 and 21). In addition, extrinsic versus intrinsic experimental condition had a significant positive standardized indirect effect on hedonic well-being,  $\beta = .02$ ,  $p = .042$ , and eudaimonic well-being,  $\beta = .05$ ,  $p = .016$ , indicating that individuals in the intrinsic condition had significantly greater focus

Figure 2. Three Pairs of Manipulated Motivational Constructs Predicting Motivational Focus and Well-Being

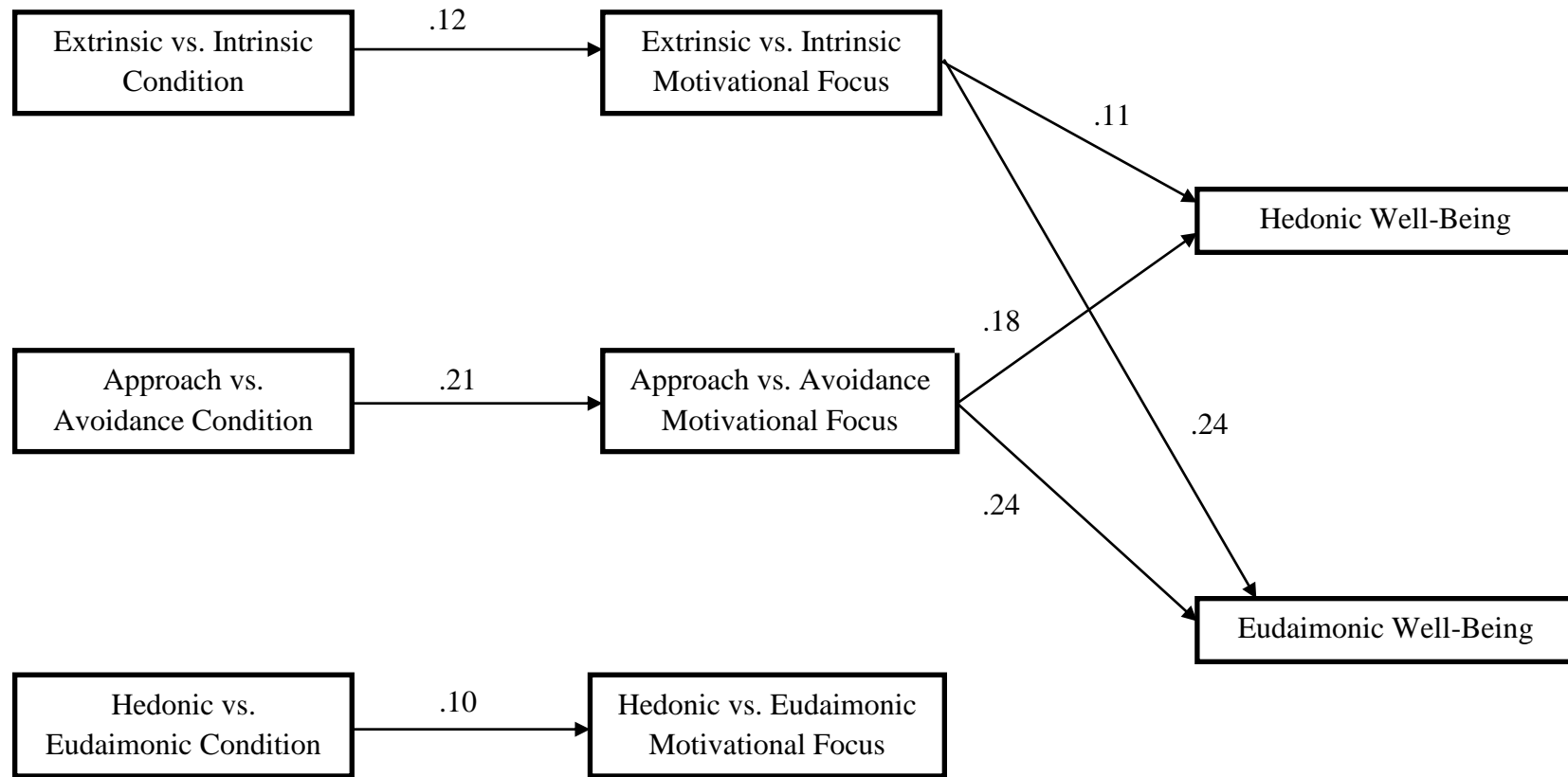


Figure 2. Path model with three pairs of manipulated motivational constructs predicting motivational focus, and predicting hedonic and eudaimonic well-being. Standardized path coefficients are displayed for significant effects only ( $p < .05$ ).

on intrinsic (vs. extrinsic) goals, than did individuals in the extrinsic condition, and these goals were linked with significantly greater eudaimonic *and* hedonic well-being. Thus, the effect of extrinsic versus intrinsic condition on each type of well-being was *indirect*, carried through extrinsic versus intrinsic motivational focus.

Further, avoidance versus approach experimental condition had a significant positive standardized indirect effect on hedonic well-being,  $\beta = .04$ ,  $p = .001$ , and eudaimonic well-being,  $\beta = .06$ ,  $p = .003$ , indicating that individuals in the approach condition had significantly greater focus on approach (vs. avoidance) goals, than did individuals in the avoidance condition, and these goals were linked with significantly greater eudaimonic *and* hedonic well-being. Thus, the effect of avoidance versus approach condition on each type of well-being was *indirect*, carried through avoidance versus approach motivational focus.

Lastly, hedonic versus eudaimonic experimental condition had a non-significant standardized indirect effect on hedonic well-being,  $\beta = -.01$ ,  $p = .442$ , and eudaimonic well-being,  $\beta = -.02$ ,  $p = .264$ . Thus the indirect effect of hedonic versus eudaimonic condition on each type of well-being was non-significant.

Taken together, these results provide some support for the idea of experimental condition indirectly impacting well-being. More specifically, extrinsic versus intrinsic and avoidance versus approach experimental conditions indirectly impacted well-being through shifting motivation focus in the anticipated directions.

## **Discussion**

**Assessing the impact of the experimental manipulation on well-being.** The main goal of this study was to determine if manipulating each of the three pairs of goal-

level motivational constructs impacts eudaimonic and hedonic well-being. It was hypothesized that the goal-level manipulations would result in corresponding shifts in participants' motivational focus and therefore induce the effects on each type of well-being associated with the particular goal-level motivational construct (Hypothesis 1). Specifically, it was hypothesized that hedonic well-being would be higher in the intrinsic compared to the extrinsic condition, higher in the approach compared to avoidance condition, and higher in the hedonic compared to the eudaimonic condition (Hypothesis 1A), and that eudaimonic well-being would be higher in the intrinsic compared to the extrinsic condition, higher in the approach compared to avoidance condition, and higher in the eudaimonic compared to the hedonic condition (Hypothesis 1B). It was also expected that motivational concepts having similar individual associations with well-being would interact, amplifying their respective effects on well-being (Hypothesis 2). More specifically, it was expected that individuals assigned to the intrinsic, approach, and eudaimonic condition would have the highest level of hedonic (Hypothesis 2A) and eudaimonic (Hypothesis 2B) well-being compared to all other conditions. The pattern of results revealed and implications of these findings are discussed below.

***Effect of experimental condition on eudaimonic and hedonic well-being.***

*Main effects.* Contrary to my predictions, none of the manipulated pairs of motivational constructs (intrinsic/extrinsic, approach/avoidance, and eudaimonic/hedonic) had significant main effects on hedonic or eudaimonic well-being, thus providing no support for Hypothesis 1A or 1B. These findings are in contrast to previous research, which has found that experimental manipulations of each individual pair have significant effects on hedonic and eudaimonic well-being (e.g., Braverman &

Frost, 2012; Huta & Ryan, 2010; Weinstein & Hodgins, 2009). My results indicate that the experimental manipulation did not work as intended. Although it is unclear why the manipulations did not produce the hypothesized main effects, potential explanations are offered that may explain the null results and provide guidance for future research.

As stated at the beginning of this study, the present research is the first to aim to manipulate three motivational constructs simultaneously. Given that the simultaneous manipulation of these constructs is not well-established in the motivational literature, a significant effort was made to employ a general method (text priming of key words) that was successful in individual pair manipulations. It may simply be that this type of manipulation is not strong enough to impact motivational focus on three individual pairs of constructs in a way that produces significant *direct* effects for eudaimonic and hedonic well-being. More specifically, whereas the text priming method may be successful for manipulating one construct in a way that impacts well-being, it may be unsuccessful at doing so for manipulating multiple constructs. Other studies that have employed priming through text (narratives, instructions, etc.) have sought to manipulate one construct by having key words and phrases associated with that particular construct repeatedly stated—thus, the priming is focused and accumulating for one individual construct. In my priming approach, three constructs were manipulated simultaneously by having a key word or phrase associated with each of the three constructs stated sequentially, in five separate statements—thus, the priming was dispersed and gradual across three separate constructs (some of which were conceptually incongruent, such as extrinsic and eudaimonic goal motivation). This difference may explain why the various combinations of the constructs associated with each condition in the manipulation did not translate to



individual main effects on well-being of each goal motivation pairing that have been evidenced in previous research using text priming with a purer focus (i.e. one construct).

Other methods that been successful in previous literature for priming individual pairs of motivational constructs, such as verbal instructions (Mathews & Shook, 2013), or activity or task engagement (Huta & Ryan, 2010), may be more successful in the simultaneous manipulation of multiple goal motivation constructs. Although it is unclear if this is the case or not, future research comparing the effects of the text priming/instruction method for manipulating motivational focus on one, two, and three pairs of constructs, as well as against other methods, is needed.

It is also possible that it was not the method employed in this study that was unsuccessful, but rather the specific manipulation that was designed based on this method. More specifically, because there is no standard way to utilize the text priming method, there is significant variation in the exact methodologies employing these methods. It may be that my *specific* manipulation, which was created for the purposes of this study, was unsuccessful at manipulating the pairs of motivational constructs in ways which translated into *direct* effects on the outcome variables (hedonic and eudaimonic well-being) and that other such text priming/instruction methods would be successful. For example, in relation to the discussion above, it may be that if the text priming narrative I designed had a separate paragraph (focused and accumulating priming) for each construct, instead of five combined statements (convoluted and gradual priming), it may have been more effective. As a further example, in Part 3 of the manipulation, participants were asked to list goals associated with their condition, one construct at a time (see Appendix 13.3). When entering the data and reading the responses, it was

evident that a large portion of the goals listed were future oriented (i.e., “get a good job” and “get married”). This focus on *future* goals and achievements may have diluted the influence on *current* well-being as a result of the temporal separation. Thus, perhaps if the manipulation had specified that participants should list only goals they were pursuing *currently*, the resulting effects on current well-being may have been stronger. Future research comparing the effectiveness of manipulating motivational constructs simultaneously using the specific method employed in this study with other text priming/instruction methods is needed to explore this possibility.

Conversely, it may also be that type of manipulation and the specific design of the manipulation were effective in manipulating motivational focus to impact well-being in ways that were not detected due to the choice of outcome measures employed in this study. More specifically, this type of manipulation has been successful at manipulating various indicators of hedonic and eudaimonic well-being that were not assessed in this study, including self-esteem (Hodgins et al., 2007), gratitude (Mathews & Shook, 2013), and optimism (Braverman & Frost, 2012). Thus, the manipulation may not have been successful in impacting well-being as measured by the specific scale scores comprising each of the hedonic and eudaimonic well-being composites. In a similar vein, although the scales used for each of the respective composite well-being scores were correlated in the way they were expected to (see Table 13), it may be that some of the experimental effects were not strong enough to significantly differ for the composite well-being scores, but were for the scales comprising the composite scores for each type of well-being. Thus, some potential effects of the experimental manipulation may have been masked by the use of composite well-being scores.

In order to test this idea, five 2 x 2 x 2 ANOVAs were conducted post hoc to test the effect of experimental condition (extrinsic versus intrinsic, avoidance versus approach, hedonic versus eudaimonic) and their interactions on each of the five well-being indicators (positive affect, negative affect, life satisfaction, psychological well-being, eudaimonic well-being). Across these five analyses, there was only one significant main effect of experimental condition —individuals in the intrinsic, compared to the extrinsic, experimental condition reported significantly higher scores on the PWB. Nonetheless, this indicates that the effect of the manipulation may be, to a small extent, dependent on whether or not composite scores are utilized. Future research manipulating pairs of motivational constructs simultaneously, using a wider variety of hedonic and eudaimonic well-being indicators, and individual and composite scores for these indicators, is needed to better understand how motivational manipulations involving multiple constructs may impact individual outcomes.

In sum, although it is unclear why the experimental manipulation did not produce the expected effects associated with hedonic and eudaimonic well-being, it may be related to type of method used, the specific manipulation designed using this method, or the choice of well-being indicators and their measurement. Further, some combination of these factors may have been the cause of the null results.

*Interaction effects.* With respect to the interactive effects of experimental condition, contrary to my predictions, individuals in the intrinsic, approach, and eudaimonic conditions did not have higher hedonic and eudaimonic well-being, respectively, compared to individuals in all other conditions, thus providing no support for Hypothesis 2A and 2B. Although the non-significant interactions are consistent with

the lack of main effects discussed above, one may expect that despite the absence of individual effects, the amplification effects associated with the optimal motivation combination (as discussed in Study 1) would still reach significance. The finding that they did not may be a result of the manipulation not shifting motivational focus in the way it was intended to (i.e., small effect size, lack of direct effect; as described above with respect to the main effects), *or* it may indicate these constructs are redundant with one another. More specifically, in Study 1 I stated that the findings associated with the optimal motivation combination may mean that these constructs are co-occurring and interact to produce the most positive well-being outcomes. Conversely, I also stated that these constructs may simply be redundant with one another, and variations of the same underlying “positive” motivation process. If this was the case, one would expect the cumulative impact of these constructs to be no stronger than each of their individual contributions in impacting hedonic and eudaimonic well-being due to this underlying similarity—an idea consistent with the present results. Future research, assessing various ways of manipulating these constructs and their potential interactive effects is needed to better understand the pattern of results ascertained in this study.

#### **Comparing the impact of experimental manipulation on type of well-being.**

With respect to the relative magnitudes of the main effects of the manipulated motivational goal construct pairings on the two types of well-being, differences between the intrinsic versus extrinsic conditions were predicted to be larger for eudaimonic than for hedonic well-being; differences between the approach versus avoidance conditions were expected to be comparable for hedonic and eudaimonic well-being; and differences between the hedonic versus eudaimonic conditions were expected to be comparable for

hedonic and eudaimonic well-being (Hypothesis 1C). With respect to the anticipated interactions among the manipulated motivational goal constructs pairings, it was expected that for participants in the combined intrinsic, approach, and eudaimonic goals condition, eudaimonic well-being would be higher than hedonic well-being (Hypothesis 2C).

***Effect of experimental condition on eudaimonic versus hedonic well-being.***

Contrary to my predictions, none of the two-way interactions between the pairs of motivational constructs (intrinsic/extrinsic, approach/avoidance, eudaimonic/hedonic) and type of well-being (hedonic/eudaimonic) were significant. Thus, Hypothesis 1C was not supported. These findings are in contrast to previous research regarding each individual pair (i.e., Huta & Ryan, 2010; Ryan et al., 2008). Although in contrast to previous research, present findings are consistent with the results discussed with respect to the main effects of Study 2. Specifically, if the manipulations of the three pairs of motivational constructs did not differ significantly in their impact on hedonic and eudaimonic well-being, the magnitudes of differences between hedonic and eudaimonic well-being by condition is unlikely to be significant. Future research, following the suggestions outlined above, may be able to better address the differences between the experimental conditions in their relative impact on well-being type in more meaningful ways.

Further, the four-way interaction between the experimental condition variables and well-being type was non-significant—indicating that participants in the combined intrinsic, approach, and eudaimonic condition did not have significantly higher eudaimonic, than hedonic, well-being—thus, Hypothesis 2C was not supported. This null result may be an artifact of the methodology (i.e., manipulation and measures), an

indication of redundancy among these constructs, or some combination of the two. Future research is needed to explore which of these explanations is responsible for the pattern of results obtained in this study.

Although not part of the main hypotheses associated with this study, results did reveal a significant three-way interaction between the extrinsic versus intrinsic and hedonic versus eudaimonic conditions, and well-being type. Specifically, eudaimonic well-being was significantly higher for those in both the eudaimonic and intrinsic conditions, whereas hedonic well-being was not. Although the effect was weak and may be due to chance, this finding nonetheless provides some support for Hypothesis 2C concerning the relative differences in the effects of the optimal combination on hedonic and eudaimonic well-being.

Further, this finding provides important information for the motivational literature. Previous empirical and theoretical work has highlighted the link between intrinsic and eudaimonic concepts (e.g., Ryan et al., 2008; Waterman et al., 2008). This previous research, however, has either studied the effects of each separately, equated the two concepts, or viewed one as stemming from, or building on, the other. In contrast, the present findings show that the two individual concepts may reciprocally build on one another to produce well-being benefits, particularly with respect to eudaimonic well-being. This, in combination with the findings from Study 1, provides evidence for the optimal motivation combination. However, the third construct associated with the optimal motivation combination—approach motivation—was absent from this interaction. This may be an artifact of the issues with the manipulation itself, or, rather, this may be indicative of conceptual differences within the optimal motivation combination wherein

intrinsic and eudaimonic motivation function together in ways that are independent of the effects of approach motivation. Nonetheless, given the potential issues with the manipulation identified previously, finding a significant two-way interaction between extrinsic versus intrinsic and hedonic versus eudaimonic conditions on eudaimonic versus hedonic well-being is encouraging. Future research aiming to manipulate motivational constructs simultaneously should pay particular attention to the interactive effects of intrinsic and eudaimonic goal motivation on hedonic and eudaimonic well-being as well as exploring whether this interaction extends to other aspects of positive functioning (e.g., self-esteem, optimism).

**Follow-up analyses: Participants' reported motivational focus.** As noted in the preliminary analyses, the vast majority of participants showed good comprehension of the experimental manipulation narrative, and participants reported (post-hoc) greater focus on the construct of each goal motivation pair (intrinsic/extrinsic, approach/avoidance, eudaimonic/hedonic) that was relevant to their experimental condition. These findings indicated that the manipulations targeted the constructs of interest, as intended. However, results associated with the main study hypotheses received essentially no support. Thus, follow-up analyses were conducted to further explore these findings. Specifically, I evaluated whether the experimental manipulations may have impacted eudaimonic and hedonic well-being *indirectly*, through participants' motivational focus, as conveyed by their responses to the manipulation check questions.

***Experimental condition predicting motivational focus.***

*Main effects.* Consistent with the manipulation check predictions, each of the manipulated pairs of motivational constructs (intrinsic/extrinsic, approach/avoidance, and

eudaimonic/hedonic) were significantly predictive of greater focus on that pair, in the expected direction (e.g., being in the intrinsic, compared to the extrinsic condition, predicted greater focus on intrinsic goals versus extrinsic goals) at step 1 of the regression models. Further, none of the pairs of manipulated motivational constructs significantly predicted focus on constructs other than themselves. Thus, findings indicate that the manipulation was successful in shifting motivational focus as intended. Implications of these findings are discussed below.

Most importantly, these results indicate that it *is* possible to manipulate three motivational constructs simultaneously. Specifically, the experimental manipulations resulted in participants focusing more on motivational constructs associated with their respective conditions. Additionally, there was no overlap in the main effects (i.e., pairs of constructs predicted only focus on themselves). Taken together, this indicates that it is in fact possible to successfully manipulate three motivational constructs simultaneously, *and* independently. This study is the first to attempt this, and the success of the manipulations provides a valuable contribution to the literature. However, it is important to note that the manipulations, although successful at shifting motivational focus, were not successful at impacting well-being in the intended ways. It had been expected that the mechanism through which the manipulation would impact well-being was temporary motivational focus. Specifically, it was predicted that priming of a given motivational construct would shift motivational focus to that construct and induce the effects on well-being typically associated with that construct.

Also of interest, the significant main effects of experimental condition on motivational focus (i.e., at step 1) were no longer significant when assessed *in*



*conjunction with* the two and three way interactions among these pairs (i.e., at step 3).

Although the cause of this is unclear, it may be simply a lack of statistical power—because the significant main effects obtained were small in magnitude, there was simply not enough statistical power to detect significant main effects in the presence of increasingly more predictors. Thus, future research aimed at manipulating motivational constructs simultaneously should seek to design and utilize experimental manipulations that have stronger effects on the mechanisms through which the intended outcomes are impacted.

*Interaction effects.* Although there were no hypotheses associated with the interactive effects of experimental condition on motivational condition, there were two noteworthy findings associated with the results. Given this, predictive effects of the two and three way interactions tested at steps 2 and 3 of the regression models will be briefly discussed.

The interaction between extrinsic versus intrinsic and hedonic versus eudaimonic experimental conditions in predicting avoidance versus approach motivational focus was significant at steps 2 and 3, such that membership in both the intrinsic and eudaimonic conditions (compared to membership in either group alone) predicted significantly greater focus on approach compared to avoidance goals. The interaction between these variables was also a significant predictor of hedonic versus eudaimonic motivational focus at step 3, such that membership in both the intrinsic and eudaimonic conditions (compared to membership in either group alone) predicted significantly greater focus on eudaimonic compared to hedonic goals (note however that the overall model was not significant at step 3). These findings, particularly the former, support the idea of the special combination of optimal motivation constructs given that joint membership in

intrinsic and eudaimonic conditions predicted greater focus on approach goals. Thus, experimental manipulations associated with intrinsic and eudaimonic goal motivation may trigger greater focus on the third construct—approach goal motivation.

Secondly, although there were few significant results with respect to the main analyses, the one significant interaction in the main analyses involved the extrinsic versus intrinsic and hedonic versus eudaimonic experimental conditions—the same variables involved in the presently discussed interaction. It appears that, despite few significant results, there is some consistency throughout the results with respect to the interactive effects between extrinsic versus intrinsic and hedonic versus eudaimonic experimental conditions. This finding provides further evidence for the idea that intrinsic and eudaimonic motivation function together in ways that are independent of the effects of approach motivation, as discussed above, and yet are related to focus on this construct, and that future research aiming to manipulate motivational constructs simultaneously should pay particular attention to the interactive effects of intrinsic (vs. extrinsic) and eudaimonic (vs. hedonic) goal motivation.

***Motivational focus predicting hedonic and eudaimonic well-being.***

*Main effects.* Consistent with the idea that manipulated motivational focus should impact well-being, of the individual predictors, extrinsic versus intrinsic, and avoidance versus approach motivational focus predicted significant unique variability in hedonic and eudaimonic well-being, respectively, at all three steps of the regression models. Specifically, greater hedonic and eudaimonic well-being were each predicted by greater focus on intrinsic compared to extrinsic goals, and greater focus on approach compared to avoidance goals. Although these analyses were not part of the main study hypotheses,

they do provide support for Hypothesis 1A, according to which greater intrinsic focus and greater approach focus should predict greater hedonic well-being, and for Hypothesis 1B, according to which greater intrinsic focus and greater approach focus should predict greater eudaimonic well-being. Implications of these results are discussed below.

These findings are consistent with previous research showing that motivational focus (i.e., dispositional) predicts hedonic and eudaimonic well-being (e.g., Elliot & Thrash, 2010; Huta & Ryan, 2010; Neyrinck et al., 2006), as well as studies employing experimental designs to manipulate motivational focus for each separate pair of constructs in order to impact well-being (e.g. Braverman & Frost, 2012; Huta & Ryan, 2010; Weinstein & Hodgins, 2009). What is encouraging is that, in the present case, motivational focus was successfully manipulated across all three pairs of constructs. Thus, the predictive effects of the extrinsic versus intrinsic and the avoidance versus approach motivational focus variables on hedonic and eudaimonic well-being are likely a result of the manipulation, at least to some extent. However, it is not clear to what extent the predictive effects of motivational focus on well-being were a result of the manipulation, versus other factors. For example, if the manipulations were not strong enough, responses to the motivational focus questions following the manipulation may have been based on the individuals' stable, dispositional motivation to some degree—and these dispositional variables were not assessed in this study. Nonetheless, my results are informative of the mechanisms through which simultaneously manipulated motivational constructs can impact well-being—a point that will aid in future research seeking to manipulate multiple motivational constructs simultaneously.

Another noteworthy issue is that that extrinsic versus intrinsic motivational focus was a stronger predictor of eudaimonic, than of hedonic, well-being. This finding supports Hypothesis 1C, according to which the difference in eudaimonic well-being between individuals in the extrinsic versus intrinsic group will be larger than the difference in hedonic well-being. Further, this finding supports the idea that whereas intrinsic motivation is particularly important for bolstering a sense of eudaimonic well-being (Ryan et al., 2008), extrinsic motivation is particularly harmful in its impact on eudaimonic well-being (Kasser & Ryan, 1993). Although this notion has been suggested in previous literature, this study is the first to directly test the relative predictive effects of intrinsic versus extrinsic motivation on hedonic compared to eudaimonic well-being, providing a valuable contribution to the literature.

In contrast, avoidance versus approach motivational focus showed no significant difference in its predictive effect on the two types of well-being. This finding supports Hypothesis 1C, according to which differences between the approach versus avoidance conditions were expected to be comparable for hedonic and eudaimonic well-being. This finding supports the idea that the positive predictive effects of approach motivation and the negative predictive effects associated with avoidance motivation, are similar across well-being types (Nitkin & Freund, 2010). Although this notion has been suggested in previous literature, this study is the first to directly test the hypothesized similarity in the effects on hedonic compared to eudaimonic well-being, providing a valuable contribution to the literature

Despite the significant predictive effects for two of the motivational focus variables, hedonic versus eudaimonic motivational focus was not predictive of hedonic or

eudaimonic well-being, indicating that the degree to which participants were focusing on eudaimonic versus hedonic goals did not result in greater or lesser well-being. Although it is unclear why this motivational focus variable did not predict either type of well-being, it may be related to the nature of the constructs. Specifically, unlike the other two pairs of constructs, which consist of a seemingly “positive” and “negative” construct that appear to be at odds with one another (e.g., avoidance vs. approach), the hedonic/eudaimonic pair are both positive and have been associated with greater hedonic and eudaimonic well-being (Huta & Ryan, 2010). As a result, the constructs associated with the hedonic/eudaimonic pair are less incongruent with one another as the constructs comprising the other two pairs. Providing evidence for this, of the three motivational focus variables, the mean for hedonic versus eudaimonic goal focus was close to midpoint of the scale ( $M = 3.19$ ) whereas the means for the other two focus variables (extrinsic/intrinsic, avoidance/approach) were located more toward the upper end of the scale ( $M_s = 3.57$  and  $4.05$ , respectively), indicating less extreme focus on one construct versus the other. These points suggest that the difference in focus between the hedonic versus eudaimonic constructs may not have been strong enough to predict well-being.

*Interaction effects.* Although there were no hypotheses associated with the interactive effects of motivational focus on well-being, and results indicated there were no significant two or three way interactions, this lack of effects is relevant to understanding *why* the manipulation did not work as intended. Thus, interaction effects will be briefly discussed.

Results indicated that focus on each of the three manipulated pairs of constructs individually predicted well-being. Despite these significant main effects, none of the

interactions associated with these variables produced significant effects, indicating that the *combinations* of motivational constructs were unsuccessful at predicting well-being and that something about the *simultaneous* manipulation of three constructs was not effective in terms of producing *interactive* effects as intended. Although it is unclear why the impact of the manipulation was associated solely with the main effects of motivational focus, it may be related to the design of the study. Specifically, focusing on three constructs simultaneously may have been confusing for participants, particularly those in conditions where the constructs are conceptually incongruent (i.e., avoidance/eudaimonic). In addition, for those in conditions where the constructs are conceptually congruent (i.e., intrinsic/eudaimonic), there may have been redundancy of the effects rather than amplification of the effects as hypothesized. Future research using stronger and more varied manipulations is needed in order to better understand how to successfully manipulate three motivational constructs in ways that produce interactive effects on well-being.

***Experimental condition and motivational focus predicting hedonic and eudaimonic well-being.*** Given the findings described above with respect the follow-up analyses, it was hypothesized (post hoc) that experimental condition may be predictive of well-being *indirectly*, through motivational focus. Indeed, both extrinsic versus intrinsic and avoidance versus approach experimental conditions had significant (albeit weak) indirect effects on both hedonic and eudaimonic well-being, carried through the corresponding motivational focus variables. These results provide some evidence that one mechanism through which the manipulation of pairs of motivational constructs may impact well-being is motivational focus. Because the manipulation was successful at

producing indirect, but *not* direct effects (as intended), future research needs to seek to develop stronger manipulations which may be successful at producing not only indirect, but also *direct* effects on the primary outcome variables.

Although the hedonic versus eudaimonic condition did not have a significant indirect effect on hedonic or eudaimonic well-being, this can be understood given the findings from the previous section. Specifically, although the hedonic versus eudaimonic manipulation predicted hedonic versus eudaimonic motivational focus, hedonic versus eudaimonic motivational focus did not predict either type of well-being, and thus, the product of these predictive paths (i.e., the indirect effect) was not statistically significant. As described above, more differentiation between the hedonic and eudaimonic goal aspects may have resulted in different results. Additionally, the approach employed in the present study of manipulating these two concepts as opposing pairs (i.e., hedonic vs. eudaimonic goal focus) may be less effective than manipulating each part of the pair individually, based on the full-life hypothesis (Huta & Ryan, 2010) comprising high levels of both hedonic and eudaimonic concepts. Future research is needed to explore these possibilities.

### **Limitations**

In addition to the caveats and limitations already discussed above, several other issues are noteworthy. Firstly, with respect to the experimental manipulation, motivational constructs were manipulated as pairs, such that each of the eight experimental conditions comprised only one construct associated with each of the three pairs. In hindsight, given the lack of significant findings, it may be that the effects of some constructs were masked, diluted, or not distinguishable when assessed as pairs—

particularly given none of the three pairs of constructs were strongly negatively correlated in Study 1 (Table 4). Thus, an experiment manipulating each of the six individual motivational constructs with conditions corresponding to all possible combinations of these six constructs may produce more informative results.

A second limitation is with respect to the sample, which was primarily first-year female undergraduates. As stated in Study 1, previous research has found that the main outcome variables in this study—hedonic and eudaimonic well-being—may covary with demographic factors such as age, sex, and education (Diener et al., 1999; Ryff, 1989). Specifically, aspects of hedonic well-being (i.e., positive affect, negative affect, and life satisfaction) each fluctuate across the lifespan, show sex-related differences (i.e., greater frequency for positive and negative emotions in females) and may be positively related to education levels (Diener et al., 1999). Similarly, aspects of eudaimonic well-being fluctuate across the lifespan (i.e., lower environmental mastery and higher personal growth in younger versus older adults) and show sex-related differences (i.e., greater positive relations with others and more personal growth are experienced by women; Ryff, 1989). Given that my sample was comprised primarily of female undergraduate students, the findings may only apply to this particular population and not be generalizable to a larger population (i.e., men, middle-aged and older adults, and less-educated individuals). Future research should examine the effects of experimentally manipulated motivational constructs on and hedonic well-being in more diverse samples.

A third limitation, with respect to the results, is the small effects observed. Although it is encouraging that the manipulation shifted motivational focus as intended, the diminutive effects of the manipulations indicate that variance in motivational focus



was largely accounted for by other variables or factors not examined in this study.

Notably, dispositional motivation may have played a role. If the manipulation had a weak effect on motivational focus, it is possible that participants' stable, trait-like, dispositional motivation tendencies had a strong and influential role in determining their motivational focus. Although dispositional motivation constructs were assessed in Study 1, these constructs were omitted from Study 2 because: assessment of dispositional motivation prior to the manipulation may have primed responses, or assessment following the manipulation may have been primed by the experimental manipulation. Nonetheless, in order to explore this directly, future research should assess dispositional motivation and control for these constructs in experimental manipulations related to motivational focus.

Lastly, although this study demonstrated that shifted motivational focus impacted well-being, the practical applications of these findings in daily life are unclear—specifically, how the findings from this study may be employed as a tool to bolster well-being and positive outcomes among individuals. To better understand this issue, three important questions are raised, but left unanswered, by the current research. First, for how long are the effects of motivational focus on well-being present (following a manipulation)? It is unclear whether the effects present in my study would fade immediately, or be present long enough to lead to a potential upward spiral in well-being. Second, can shifted motivational focus be maintained to produce long-lasting effects on well-being? With repeated manipulation over time (using the current method, or an alternative outlined above) would the effects on well-being continue to be present, or would some sort of adaptation to the manipulation take place (i.e., practice effects or reversion to a set-point)? Third, how far-reaching are the effects of experimentally shifted

motivational focus? It is unclear what other individual outcomes (i.e., achievement, productivity, social relationships)—beyond self-reported hedonic and eudaimonic well-being—could be impacted by the simultaneous manipulation of three pairs of motivational constructs. Thus, in order to better understand how the findings associated with the current study may be useful for practical settings (i.e., education, workplace, clinical), experimental research using longitudinal designs and assessing a broader range of individual outcomes is needed.

## Conclusion

Despite the aforementioned limitations, this study provides a valuable contribution to the literature through experimentally manipulating multiple goal motivation constructs simultaneously and gauging the effects of such manipulations on hedonic and eudaimonic well-being. Using this novel approach, my results clearly demonstrated that it is possible to manipulate motivational constructs simultaneously in ways that shift motivation focus, subsequently resulting in significant indirect effects on both hedonic and eudaimonic well-being. Despite this, hypotheses concerning direct effects of the manipulated constructs on well-being firmly rooted in previous literature *assessing one construct at a time* received little support. Although this may be indicative of a myriad of problems with various aspects of this specific study (outlined above), it may, conversely, be telling of an issue relevant to the broader motivation and well-being literatures—when experimentally manipulating and *assessing various motivational constructs*, the effects on well-being are not as simple as they seem when assessing the pairs of constructs separately. If the goal of this type of research is to understand how motivation impacts well-being, it is arguably more useful to try and understand the

cumulative and interactive effects of the various goal-related motives individuals may possess at any given time. Such a perspective offers the potential for better understanding how motivation as an integrated system may impact well-being. The findings from this study provide a rich basis for future research aiming to explore these issues from a comprehensive, integrated framework.

## **General Discussion**

The studies comprising this thesis aimed to simultaneously evaluate three pairs of motivational constructs in order to better understand how they relate to two types of well-being. The focus of Study 1 was to understand the relationships between motivational constructs and well-being using a correlational design. More specifically, the goals of Study 1 were to evaluate the associations among motivational tendencies at the general disposition and goal levels and to explore how the various motivational tendencies relate to hedonic and eudaimonic well-being. The focus of Study 2 was to examine how combinations of motivational constructs impact well-being using an experimental design. More specifically, the goal of Study 2 was to determine how manipulating each of the three pairs of goal-level motivational constructs, individually and in interaction, impacts hedonic and eudaimonic well-being. Beyond the study-specific results discussed thus far in each of the respective Discussion sections, there are several notable points relevant to both studies concerning the simultaneous assessment of the three pairs of constructs, the constructs' associations with well-being, and the integration of the three pairs of motivational constructs.

### **Three Pairs of Motivational Constructs**

Findings from the two studies comprising this thesis provide evidence for the value of using an integrated approach to assess the relationships between motivational constructs and well-being. Specifically, findings of previous research studies assessing each pair of constructs *individually* generally support the following notions: whereas intrinsic constructs are positively associated with hedonic and eudaimonic well-being, extrinsic constructs are negatively associated with hedonic and eudaimonic well-being;

whereas approach constructs are positively associated with hedonic and eudaimonic well-being, avoidance constructs are negatively associated with hedonic and eudaimonic well-being; and both eudaimonic and hedonic constructs are positively associated with hedonic and eudaimonic well-being.

Despite this consistent pattern of associations from previous research, many of these expected associations were notably absent in my results. Simply put, the patterns of predictive and experimental effects differ to some extent when assessing the pairs *individually* versus *simultaneously*. The value of demonstrating these differences is two-fold. First, it demonstrates that the pattern of results for each pair detailed in the previous paragraph may be relevant only in the absence of the other disposition-level and goal-level motivations, an idea not yet considered or explored in the literature. Second, because individuals are rarely motivated by only one factor at a time or in a given situation, at only the disposition or goal level, it demonstrates that we may in fact know very little about how *together* these six motivational concepts impact hedonic and/or eudaimonic well-being.

Further, with respect to the structure of how these various concepts are related to each other, within and across levels, results from Study 1 show that the anticipated associations among the concepts were not clearly observed in the exploratory factor analyses. Specifically, instead of the clear, two factor solution that was expected, a more convoluted five factor solution was revealed—a pattern of results that further highlights the complex associations between motivational constructs when they are examined simultaneously. Thus, both with respect to the motivational constructs' associations with each other, *and* with well-being, it is evident that the simultaneous consideration of three

pairs of constructs, at two levels of analysis, in relation to two types of well-being provides a complex, yet intriguing, pattern of results that warrants further examination in future research.

An obvious question becomes *why* does the pattern of results change when assessing constructs individually (or as a pair) versus simultaneously? It seems as though each pair of constructs represents a piece of a puzzle, but when the pieces are put together, they create a picture deviating from the one intended or expected. The conjoining of pieces alters each one and ultimately, the end product. The answer seems to lie within the potential interactive effects between the constructs assessed in these studies. Such potential interactions were addressed in the introduction and provided the basis for Study 2, yet still require further examination as the studies comprising this thesis found preliminary, but limited support for this idea. Rather, the collective pattern of results obtained from Studies 1 and 2 seems to indicate that constructs may co-occur (in particular the intrinsic, approach, and eudaimonic constructs) but results did not provide adequate insight into whether these constructs are simply redundant with one another, are separate and independent processes, or have joint effects on hedonic and eudaimonic well-being. More specifically, whereas Study 1 demonstrated a factor structure and predictive effects among motivational constructs indicative of co-occurring and yet unique effects (particularly for intrinsic, approach, and eudaimonic concepts), Study 2 failed to produce significant main effects or interactions among these constructs, with the exception of the extrinsic/intrinsic and hedonic/eudaimonic goal constructs. Thus, it remains unclear as to what, if any, effect the combinations of motivational constructs at the disposition and goal levels may have. However, given the issues with Study 2 that

were raised, the encouraging support for potential joint effects provided by Study 1 warrant further research, particularly with respect to the optimal motivation combination at the dispositional level.

Despite the intriguing notion that the co-occurrence of various motivational constructs may be associated with well-being in ways that differ from their respective individual associations, this idea should be taken with caution. The findings from these studies are the first to simultaneously assess multiple pairs of motivational concepts and thus require replication and further research. Nonetheless, the results from Studies 1 and 2 provide strong indication for the need for further research on the integration and simultaneous assessment of motivation constructs, both with respect to their associations with each other, and their predictive and causal effects on well-being.

### **Hedonic and Eudaimonic Well-Being**

The main outcome variables assessed in this study, hedonic and eudaimonic well-being, are typically regarded as conceptually distinct constructs (e.g., Diener, 1984; Ryan & Deci, 2001), but the empirical distinctiveness between the constructs is less established (e.g., Keyes et al., 2002). The findings from these studies, being the first to simultaneously assess three pairs of motivational constructs *and* compare effect magnitude of multiple motivational constructs across well-being outcomes, may help inform this issue. Providing insight with respect to the similarities between the two types of well-being, Study 1 found that approach dispositions positively predicted both types of well-being, avoidance dispositions negatively predicted both types of well-being, and that hedonic goals predicted both types of well-being but in opposite directions. Further, Study 2 found that focus on all three pairs of motivational constructs predicted both types

of well-being, such that focus on intrinsic, approach, and eudaimonic constructs predicted greater hedonic *and* eudaimonic well-being than focus on each constructs' counterpart (extrinsic, avoidance, hedonic). Taken together, these findings indicate that when multiple dispositional and goal constructs are assessed correlationally or experimentally, hedonic and eudaimonic well-being share common predictors.

Despite these similarities, notable differences with respect to hedonic and eudaimonic well-being also emerged, although it is important to note that the effects of these differences remain unclear. In particular, Study 1 results indicate that constructs at both the disposition and goal levels differed significantly in their strength of predictive effects on the two types of well-being, and yet Study 2 results indicate that the effect of manipulating a particular construct did not differ between types of well-being (although some evidence of differential effects on well-being was obtained in the interactions among concepts). Taken together, these findings demonstrate that certain constructs have stronger positive or negative effects on one type of well-being versus the other even when assessed in the context of other motivational concepts. In particular, constructs associated with the extrinsic, avoidance, and hedonic motivational concepts may have stronger predictive effects on hedonic than eudaimonic well-being, and eudaimonic constructs may have stronger predictive effects on eudaimonic than hedonic well-being. Whether these differences in predictive effects are meaningful with respect to the co-occurrence and combination of effects of motivational constructs requires further examination. Thus, in the context of assessing motivation as an integrated system, it will be valuable to consider not only the effect of each construct and the combination of constructs on hedonic and eudaimonic well-being, but also the *differences* in these effects. Such



understanding is critical to further informing the nature of well-being, including the extent to which hedonic and eudaimonic types of well-being can be meaningfully differentiated (or not) based on motivational underpinnings.

### **Integration**

As discussed throughout this work, an analysis of the separate literatures associated with each of the three pairs of motivational constructs revealed several conceptual similarities with respect to their defining qualities and characteristics. At an empirical level, several of these constructs appear to co-occur. Specifically, dispositional and goal motivation constructs group together as two potentially opposing processes—positive (intrinsic, approach, eudaimonic, hedonic) versus negative (avoidance, extrinsic) motivation. Additionally, there may also be a special combination comprised of three of the four positive constructs—intrinsic, approach, and eudaimonic motivation. Thus, the similarities noted between the *underlying processes* of the constructs provide insight into how these constructs may be integrated, or grouped, in ways that can be studied empirically. Indeed, congruent constructs appear to relate to well-being in similar ways when assessed simultaneously. Specifically, focus on constructs associated with the optimal motivation combination (intrinsic, approach, eudaimonic) predict greater hedonic *and* eudaimonic well-being better than does focus on their counterparts (extrinsic, avoidance, hedonic). In contrast, all of the negative motivation constructs (extrinsic, avoidance) were negative predictors of both hedonic and eudaimonic well-being (with the exception of extrinsic goals, which had a near zero effect on hedonic well-being). Taken together, these findings indicate that the positive motivation constructs and the optimal motivation combination show consistency (at both the disposition and goal levels) in

terms of their defining characteristics and meanings, their underlying processes, and their effects on hedonic and eudaimonic well-being. Thus, future research aiming to study motivation and well-being from an integrated perspective should pay specific attention to these sets of constructs.

In particular, as discussed previously, it is unclear what the cumulative and interactive effects of the optimal motivation and positive motivation constructs may be. Further, if these two combinations of constructs do share some interactive effects, it is unclear if their counter parts (i.e., negative motivation constructs) play a role in their effects. Specifically, although the constructs associated with each pair may have relatively independent effects on well-being when assessed *separately*, it is unclear if two opposing *sets* (i.e., positive versus negative motivation constructs) may have independent effects, or potential undoing and buffering effects when assessed *simultaneously*. Additionally, an understanding of *how* the combinations of constructs impact well-being is needed.

Although my goals for this thesis did not include specification of the specific psychological processes driving the hypothesized effects of motivation on well-being, previous research assessing each pair of motivational constructs separately has identified mediating variables, including: Basic Psychological Need satisfaction (Deci & Ryan, 2008), sensitivity towards positive versus negative stimuli (Elliot & Thrash 2002; 2010), perceived goal progress and competence (Elliot & Church, 2002, Elliot et al., 1997; Elliot & Sheldon, 1997), regulation of emotion, and perceived meaning derived in goal pursuits (Huta & Ryan, 2010). It is interesting to note that despite the similarities noted between some of the motivational constructs (i.e., characteristics and effects on well-being), there

is little consistency with respect to their hypothesized mediating processes in the existing literature. Thus, future research assessing multiple pairs of motivational constructs should explore similarities and differences in mediating processes, as well as the mechanisms intervening between the various *combinations* of these constructs and well-being. Such research would provide valuable information concerning *how* combinations of motivational constructs relate to well-being, as well as inform our understanding of why certain constructs “go-together” in ways that impact hedonic and eudaimonic well-being.

## **Conclusion**

Taken together, the two studies comprising this thesis provide a valuable contribution to the literatures concerning the relationships among dispositional motivation, goal motivation, and hedonic and eudaimonic well-being through the simultaneous consideration of multiple goal motivation constructs, at two levels of analysis (disposition, goals) and assessment and comparison of their predictive and experimentally manipulated effects on both hedonic and eudaimonic well-being.

My results clearly demonstrated that when assessing three pairs of motivational concepts *simultaneously* at two levels of analysis (disposition, goals), a pattern of results emerges that demonstrates meaningful similarities to, and more importantly, differences from, results of previous research assessing the constructs and/or levels separately (Study 1). My findings also demonstrate that it is possible to manipulate motivational constructs simultaneously in ways that shift motivational focus, subsequently resulting in significant indirect effects on both hedonic and eudaimonic well-being (Study 2). Thus, my findings indicate that when measuring simultaneously or experimentally manipulating various motivational constructs within the same study, the patterns of associations and effects on

well-being are not as simple as they seem when assessing or experimentally manipulating pairs of constructs and/or levels separately (as in previous research). If the goal of this type of research is to understand how motivation impacts well-being, it is arguably more useful to understand the cumulative and interactive effects of the various disposition-related and goal-related motives individuals may possess at any given time. Such a perspective offers the potential for better understanding how motivation as an integrated system may be related to, and impact, well-being. The findings from the present studies provide a rich basis for future research exploring these issues.

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## Appendix 1

### *Certificate of Ethics Clearance for Study 1*



**Brock University**  
Research Ethics Office  
Tel: 905-688-5550 ext. 3035  
Email: reb@brocku.ca

Social Science Research Ethics Board

#### Certificate of Ethics Clearance for Human Participant Research

DATE: December 19, 2012

PRINCIPAL INVESTIGATOR: BUSSERI, Michael - Psychology

FILE: 11-035 - BUSSERI

TYPE: Faculty Research      STUDENT:      SUPERVISOR: Michael Busseri

TITLE: Investigating the belief that life gets better and better over time: Sources and implications of upward subjective trajectories for life satisfaction (Evaluating life across time)

#### ETHICS CLEARANCE GRANTED

Type of Clearance: MODIFICATION      Expiry Date: 8/30/2013

The Brock University Social Sciences Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement. Clearance granted from 12/19/2012 to 8/30/2013.

The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before 8/30/2013. Continued clearance is contingent on timely submission of reports.

To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page at <http://www.brocku.ca/research/policies-and-forms/research-forms>.

In addition, throughout your research, you must report promptly to the REB:

- a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants;
- c) New information that may adversely affect the safety of the participants or the conduct of the study;
- d) Any changes in your source of funding or new funding to a previously unfunded project.

We wish you success with your research.

Approved:

Jan Frijters, Chair  
Social Sciences Research Ethics Board

**Note:** Brock University is accountable for the research carried out in its own jurisdiction or under its auspices and may refuse certain research even though the REB has found it ethically acceptable.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of research at that site.

## Appendix 2

### *General Causality Orientations Scale (GCOS)*

The following items pertain to a series of hypothetical sketches. Each sketch describes an incident and lists three ways of responding to it. Please read each sketch, imagine yourself in that situation, and then consider each of the possible responses. Think of each response option in terms of how likely it is that you would respond that way. (We all respond in a variety of ways to situations, and probably most or all responses are at least slightly likely for you.) If it is very unlikely that you would respond the way described in a given response, you should circle answer 1 or 2. If it is moderately likely, you would select a number in the mid-range, and if it is very likely that you would respond as described, you would circle answer 6 or 7.

**1. You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is:**

a) What if I can't live up to the new responsibility?

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Will I make more at this position?

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) I wonder if the new work will be interesting.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**2. You had a job interview several weeks ago. In the mail you received a form letter which states that the position has been filled. It is likely that you might think:**

a) It's not what you know, but who you know.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) I'm probably not good enough for the job.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Somehow they didn't see my qualifications as matching their needs.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**3. You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by:**

a) Telling the three workers the situation and having them work with you on the schedule.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Simply assigning times that each can break to avoid any problems.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Find out from someone in authority what to do or do what was done in the past.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**4. You have just received the results of a test you took, and you discovered that you did very poorly. Your initial reaction is likely to be:**

a) "I can't do anything right," and feel sad.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) "I wonder how it is I did so poorly," and feel disappointed.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) "That stupid test doesn't show anything," and feel angry.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**5. When you and your friend are making plans for Saturday evening, it is likely that you would:**

a) Leave it up to your friend; he (she) probably wouldn't want to do what you'd suggest.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Each make suggestions and decide together on something that you both feel like doing.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Talk your friend into doing what you want to do.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**6. You have been invited to a large party where you know very few people. As you look forward to the evening, you would likely expect that:**

a) You'll try to fit in with whatever is happening in order to have a good time and not look bad.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) You'll find some people with whom you can relate.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) You'll probably feel somewhat isolated and unnoticed.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**7. You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:**

a) Take charge: that is, you would make most of the major decisions yourself.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Follow precedent: you're not really up to the task so you'd do it the way it's been done before.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Seek participation: get input from others who want to make them before you make the final plans.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**8. Recently a position opened up at your place of work that could have meant a promotion for you. However, a person you work with was offered the job rather than you. In evaluating the situation, you're likely to think:**

a) You didn't really expect the job; you frequently get passed over.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) The other person probably "did the right things" politically to get the job.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) You would probably take a look at factors in your own performance that led you to be passed over.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**9. You are embarking on a new career. The most important consideration is likely to be:**



a) Whether you can do the work without getting in over your head.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) How interested you are in that kind of work.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Whether there are good possibilities for advancement.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**10. A woman who works for you has generally done an adequate job. However, for the past two weeks her work has not been up to par and she appears to be less actively interested in her work. Your reaction is likely to be:**

a) Tell her that her work is below what is expected and that she should start working harder.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Ask her about the problem and let her know you are available to help work it out.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) It's hard to know what to do to get her straightened out.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**11. Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:**

a) Feel interested in the new challenge and a little nervous at the same time.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Feel excited about the higher status and salary that is involved.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Feel stressed and anxious about the upcoming changes.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**12. Within your circle of friends, the one with whom you choose to spend the most time is:**

a) The one with whom you spend the most time exchanging ideas and feelings.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) The one who is the most popular of them.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) The one who needs you the most as a friend.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**13. You have a school-age daughter. On parents' night the teacher tells you that your daughter is doing poorly and doesn't seem involved in the work. You are likely to:**

a) Talk it over with your daughter to understand further what the problem is.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Scold her and hope she does better.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Make sure she does the assignments, because she should be working harder.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**14. Your friend has a habit that annoys you to the point of making you angry. It is likely that you would:**

a) Point out each time you notice it, that way he (she) will stop doing it.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Try to ignore the habit because talking about it won't do any good anyway.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Try to understand why your partner does it and why it is so upsetting for you.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**15. A close (same-sex) friend of yours has been moody lately, and a couple of times has become very angry with you over "nothing." You might:**

a) Share your observations with him/her and try to find out what is going on for him/her.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Ignore it because there's not much you can do about it anyway.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Tell him/her that you're willing to spend time together if and only if he/she makes more effort to control him/herself.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**16. Your friend's younger sister is a freshman in college. Your friend tells you that she has been doing badly and asks you what he (she) should do about it. You advise him (her) to:**

a) Talk it over with her and try to see what is going on for her.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Not mention it; there's nothing he (she) could do about it anyway.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Tell her it's important for her to do well, so she should be working harder.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**17. You feel that your friend is being inconsiderate. You would probably:**

a) Find an opportunity to explain why it bothers you; he (she) may not even realize how much it is bothering you.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Say nothing; if your friend really cares about you he (she) would understand how you feel.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Demand that your friend start being more considerate; otherwise you'll respond in kind.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

### Appendix 3

#### *Approach-Avoidance Temperament Questionnaire (ATQ)*

Please indicate how much you agree or disagree with the each of following statements by writing a number in the space provided. All of your responses are anonymous and confidential.

1. By nature, I am a very nervous person.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

2. Thinking about the things I really want energizes me.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

3. It doesn't take much to make me worry.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

4. When I see an opportunity for something I like, I immediately get excited.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

5. It doesn't take a lot to get me excited and motivated.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

6. I feel anxiety and fear very deeply.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

7. I react very strongly to bad experiences.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

8. I'm always on the lookout for positive opportunities and experiences.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

9. When it looks like something bad could happen, I have a strong urge to escape.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

10. When good things happen to me, it affects me very strongly.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

11. When I want something, I feel a strong desire to go after it.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

12. It is easy for me to imagine bad things that might happen to me.

1	2	3	4	5	6	7
strongly			neither agree nor			strongly
disagree			disagree			agree

## Appendix 4

### *Hedonic and Eudaimonic Motives*

*In general, how important is each of the following to you in your life?*

1. Seeking relaxation?

1	2	3	4	5	6	7
not at all			somewhat			very much

2. Seeking to develop a skill, learn, or gain insight into something?

1	2	3	4	5	6	7
not at all			somewhat			very much

3. Seeking to do what you believe in?

1	2	3	4	5	6	7
not at all			somewhat			very much

4. Seeking pleasure?

1	2	3	4	5	6	7
not at all			somewhat			very much

5. Seeking to pursue excellence or a personal ideal?

1	2	3	4	5	6	7
not at all			somewhat			very much

6. Seeking enjoyment?

1	2	3	4	5	6	7
not at all			somewhat			very much

7. Seeking to take it easy?

1	2	3	4	5	6	7
not at all			somewhat			very much

8. Seeking to use the best in yourself?

1	2	3	4	5	6	7
not at all			somewhat			very much

9. Seeking fun?

1	2	3	4	5	6	7
not at all			somewhat			very much

10. Seeking to live a satisfying life?

1	2	3	4	5	6	7
not at all			somewhat			very much

11. Seeking to express who I am truly?

1	2	3	4	5	6	7
not at all			somewhat			very much

12. Seeking happiness?

1	2	3	4	5	6	7
not at all			somewhat			very much

13. Seeking to live a meaningful life?

1	2	3	4	5	6	7
not at all			somewhat			very much

14. Seeking less sadness?

1	2	3	4	5	6	7
not at all			somewhat			very much

15. Seeking a life of purpose?

1	2	3	4	5	6	7
not at all			somewhat			very much



**Appendix 5*****Approach/Avoidance Goals***

Please list (and briefly describe) your top 8 goals that you are pursuing over the next year.

1. \_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
\_\_\_\_\_

4. \_\_\_\_\_  
\_\_\_\_\_

5. \_\_\_\_\_  
\_\_\_\_\_

6. \_\_\_\_\_  
\_\_\_\_\_

7. \_\_\_\_\_  
\_\_\_\_\_

8. \_\_\_\_\_  
\_\_\_\_\_

## Appendix 6

### *Aspirations Index (AI)*

Everyone has long-term Goals or Aspirations. These are the things that individuals hope to accomplish over the course of their lives. In this section, you will find a number of life goals, presented one at a time, and we ask you to rate how important each goal is to you?

1. To be a very wealthy person.

1	2	3	4	5	6	7
not at all			moderately			very

2. To grow and learn new things.

1	2	3	4	5	6	7
not at all			moderately			very

3. To have my name known by many people.

1	2	3	4	5	6	7
not at all			moderately			very

4. To have good friends that I can count on.

1	2	3	4	5	6	7
not at all			moderately			very

5. To successfully hide the signs of aging.

1	2	3	4	5	6	7
not at all			moderately			very

6. To work for the betterment of society.

1	2	3	4	5	6	7
not at all			moderately			very

7. To be physically healthy.

1	2	3	4	5	6	7
not at all			moderately			very

8. To have many expensive possessions.

1	2	3	4	5	6	7
not at all			moderately			very

9. At the end of my life, to be able to look back on my life as meaningful and complete.

1	2	3	4	5	6	7
not at all			moderately			very

10. To be admired by many people.

1	2	3	4	5	6	7
not at all			moderately			very

11. To share my life with someone I love.

1	2	3	4	5	6	7
not at all			moderately			very

12. To have people comment often about how attractive I look.

1	2	3	4	5	6	7
not at all			moderately			very

13. To assist people who need it, asking nothing in return.

1	2	3	4	5	6	7
not at all			moderately			very

14. To feel good about my level of physical fitness.

1	2	3	4	5	6	7
not at all			moderately			very

15. To be financially successful.

1	2	3	4	5	6	7
not at all			moderately			very

16. To choose what I do, instead of being pushed along by life.

1	2	3	4	5	6	7
not at all			moderately			very

17. To be famous.

1	2	3	4	5	6	7
not at all			moderately			very

18. To have committed, intimate relationships.

1	2	3	4	5	6	7
not at all			moderately			very

19. To keep up with fashions in hair and clothing.

1	2	3	4	5	6	7
not at all			moderately			very

20. To work to make the world a better place.

1	2	3	4	5	6	7
not at all			moderately			very

21. To keep myself healthy and well.

1	2	3	4	5	6	7
not at all			moderately			very

22. To be rich.

1	2	3	4	5	6	7
not at all			moderately			very

23. To know and accept who I really am.

1	2	3	4	5	6	7
not at all			moderately			very

24. To have my name appear frequently in the media.

1	2	3	4	5	6	7
not at all			moderately			very

25. To feel that there are people who really love me, and whom I love.

1	2	3	4	5	6	7
not at all			moderately			very

26. To achieve the "look" I've been after.

1	2	3	4	5	6	7
not at all			moderately			very

27. To help others improve their lives.

1	2	3	4	5	6	7
not at all			moderately			very

28. To be relatively free from sickness.

1	2	3	4	5	6	7
not at all			moderately			very

29. To have enough money to buy everything I want.

1	2	3	4	5	6	7
not at all			moderately			very

30. To gain increasing insight into why I do the things I do.

1	2	3	4	5	6	7
not at all			moderately			very

31. To be admired by lots of different people.

1	2	3	4	5	6	7
not at all			moderately			very

32. To have deep enduring relationships.

1	2	3	4	5	6	7
not at all			moderately			very

33. To have an image that others find appealing.

1	2	3	4	5	6	7
not at all			moderately			very

34. To help people in need.

1	2	3	4	5	6	7
not at all			moderately			very

35. To have a physically healthy life style.

1	2	3	4	5	6	7
not at all			moderately			very

## Appendix 7

### *Hedonic and Eudaimonic Motives for Activities (HEMA)*

*During the past week, to what degree did you approach your activities with each of the following intentions, whether or not you actually achieved your aim?*

1. Seeking relaxation?

1	2	3	4	5	6	7
not at all			somewhat			very much

2. Seeking to develop a skill, learn, or gain insight into something?

1	2	3	4	5	6	7
not at all			somewhat			very much

3. Seeking to do what you believe in?

1	2	3	4	5	6	7
not at all			somewhat			very much

4. Seeking pleasure?

1	2	3	4	5	6	7
not at all			somewhat			very much

5. Seeking to pursue excellence or a personal ideal?

1	2	3	4	5	6	7
not at all			somewhat			very much

6. Seeking enjoyment?

1	2	3	4	5	6	7
not at all			somewhat			very much

7. Seeking to take it easy?

1	2	3	4	5	6	7
not at all			somewhat			very much

8. Seeking to use the best in yourself?

1	2	3	4	5	6	7
not at all			somewhat			very much

9. Seeking fun?

1	2	3	4	5	6	7
not at all			somewhat			very much

10. Seeking to live a satisfying life?

1	2	3	4	5	6	7
not at all			somewhat			very much

11. Seeking to express who I am truly?

1	2	3	4	5	6	7
not at all			somewhat			very much

12. Seeking happiness?

1	2	3	4	5	6	7
not at all			somewhat			very much

13. Seeking to live a meaningful life?

1	2	3	4	5	6	7
not at all			somewhat			very much

14. Seeking less sadness?

1	2	3	4	5	6	7
not at all			somewhat			very much

15. Seeking a life of purpose?

1	2	3	4	5	6	7
not at all			somewhat			very much

## Appendix 8

### *Scale of Positive and Negative Experience (SPANE)*

Please think about what you have been doing and experiencing during the past four weeks. Then report how much you experienced each of the following feelings, using the scale below.

#### **Positive**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

#### **Negative**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

#### **Good**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

#### **Bad**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

#### **Pleasant**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

#### **Unpleasant**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always



**Happy**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

**Sad**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

**Afraid**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

**Joyful**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

**Angry**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

**Contented**

1	2	3	4	5
very rarely or never	rarely	sometimes	often	very often or always

## Appendix 9

### *Satisfaction with Life Scale (SWLS)*

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item. Please be open and honest in your responding.

1. I would change nothing about my current life.

1	2	3	4	5	6	7
strongly disagree			neither agree nor disagree			strongly agree

2. I am satisfied with my current life.

1	2	3	4	5	6	7
strongly disagree			neither agree nor disagree			strongly agree

3. My current life is ideal for me.

1	2	3	4	5	6	7
strongly disagree			neither agree nor disagree			strongly agree

4. The current conditions of my life are excellent.

1	2	3	4	5	6	7
strongly disagree			neither agree nor disagree			strongly agree

5. I have the important things I want right now.

1	2	3	4	5	6	7
strongly disagree			neither agree nor disagree			strongly agree

## Appendix 10

### *Scales of Psychological Well-Being (PWB)*

For each of the following statements, please provide one rating using the following 6-point scale:

1. I tend to be influenced by people with strong opinions.

1	2	3	4	5	6
strongly disagree					strongly agree

2. In general, I feel I am in charge of the situation in which I live.

1	2	3	4	5	6
strongly disagree					strongly agree

3. I think it is important to have new experiences that challenge how you think about yourself and the world.

1	2	3	4	5	6
strongly disagree					strongly agree

4. Maintaining close relationships has been difficult and frustrating for me.

1	2	3	4	5	6
strongly disagree					strongly agree

5. I live life one day at a time and don't really think about the future.

1	2	3	4	5	6
strongly disagree					strongly agree

6. When I look at the story of my life, I am pleased with how things have turned out.

1	2	3	4	5	6
strongly disagree					strongly agree

7. I have confidence in my opinions, even if they are contrary to the general consensus.

1	2	3	4	5	6
strongly disagree					strongly agree

8. The demands of everyday life often get me down.

1	2	3	4	5	6
strongly disagree					strongly agree

9. For me, life has been a continuous process of learning, changing, and growth.

1	2	3	4	5	6
strongly disagree					strongly agree

10. People would describe me as a giving person, willing to share my time with others.

1	2	3	4	5	6
strongly disagree					strongly agree

11. Some people wander aimlessly through life, but I am not one of them.

1	2	3	4	5	6
strongly disagree					strongly agree

12. I like most aspects of my personality.

1	2	3	4	5	6
strongly disagree					strongly agree

13. I judge myself by what I think is important, not by the values of what others think is important.

1	2	3	4	5	6
strongly disagree					strongly agree

14. I am quite good at managing the many responsibilities of my daily life.

1	2	3	4	5	6
strongly disagree					strongly agree

15. I gave up trying to make big improvements or changes in my life a long time ago.

1	2	3	4	5	6
strongly disagree					strongly agree

16. I have not experienced many warm and trusting relationships with others.

1	2	3	4	5	6
strongly disagree					strongly agree

17. I sometimes feel as if I've done all there is to do in life.

1	2	3	4	5	6
strongly disagree					strongly agree

18. In many ways, I feel disappointed about my achievements in life.

1

2

3

4

5

6

strongly  
disagree

strongly  
agree

## Appendix 11

### *Questionnaire for Eudaimonic Well-Being (QEWB)*

1. I find I get intensely involved in many of the things I do each day.

0	1	2	3	4
Strongly				Strongly
disagree				agree

2. I believe I have discovered who I really am.

0	1	2	3	4
Strongly				Strongly
disagree				agree

3. I think it would be ideal if things came easily to me in my life.

0	1	2	3	4
Strongly				Strongly
disagree				agree

4. My life is centered around a set of core beliefs that give meaning to my life.

0	1	2	3	4
Strongly				Strongly
disagree				agree

5. It is more important that I really enjoy what I do than that other people are impressed by it.

0	1	2	3	4
Strongly				Strongly
disagree				agree

6. I believe I know what my best potentials are and I try to develop them whenever possible.

0	1	2	3	4
Strongly				Strongly
disagree				agree

7. Other people usually know better what would be good for me to do than I know myself.

0	1	2	3	4
Strongly disagree				Strongly agree

8. I feel best when I'm doing something worth investing a great deal of effort in.

0	1	2	3	4
Strongly disagree				Strongly agree

9. I can say that I have found my purpose in life.

0	1	2	3	4
Strongly disagree				Strongly agree

10. If I did not find what I was doing rewarding for me, I do not think I could continue doing it.

0	1	2	3	4
Strongly disagree				Strongly agree

11. As yet, I've not figured out what to do with my life.

0	1	2	3	4
Strongly disagree				Strongly agree

12. I can't understand why some people want to work so hard on the things that they do.

0	1	2	3	4
Strongly disagree				Strongly agree

13. I believe it is important to know how what I'm doing fits with purposes worth pursuing.

0	1	2	3	4
Strongly disagree				Strongly agree



14. I usually know what I should do because some actions just feel right to me.

0	1	2	3	4
Strongly disagree				Strongly agree

15. When I engage in activities that involve my best potentials, I have this sense of really being alive.

0	1	2	3	4
Strongly disagree				Strongly agree

16. I am confused about what my talents really are.

0	1	2	3	4
Strongly disagree				Strongly agree

17. I find a lot of the things I do are personally expressive for me.

0	1	2	3	4
Strongly disagree				Strongly agree

18. It is important to me that I feel fulfilled by the activities that I engage in.

0	1	2	3	4
Strongly disagree				Strongly agree

19. If something is really difficult, it probably isn't worth doing.

0	1	2	3	4
Strongly disagree				Strongly agree

20. I find it hard to get really invested in the things that I do.

0	1	2	3	4
Strongly disagree				Strongly agree

21. I believe I know what I was meant to do in life.

0	1	2	3	4
Strongly disagree				Strongly agree

## Appendix 12

### *Certificate of Ethics Clearance for Study 2*



**Brock University**  
Research Ethics Board  
Tel: 905-688-5550 ext. 3035  
Email: reb@brocku.ca

Social Science Research Ethics Board

#### Certificate of Ethics Clearance for Human Participant Research

DATE: 10/29/2013  
PRINCIPAL INVESTIGATOR: BUSSERI, Michael - Psychology  
FILE: 13-056 - BUSSERI  
TYPE: Masters Thesis/Project STUDENT: Taysa-Rhea Mise  
SUPERVISOR: Michael Busseri  
TITLE: Motivation and Well-Being

#### ETHICS CLEARANCE GRANTED

Type of Clearance: NEW

Expiry Date: 10/31/2014

The Brock University Social Sciences Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement. Clearance granted from 10/29/2013 to 10/31/2014.

The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before 10/31/2014. Continued clearance is contingent on timely submission of reports.

To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page at <http://www.brocku.ca/research/policies-and-forms/research-forms>.

In addition, throughout your research, you must report promptly to the REB:

- a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants;
- c) New information that may adversely affect the safety of the participants or the conduct of the study;
- d) Any changes in your source of funding or new funding to a previously unfunded project.

We wish you success with your research.

Approved:

\_\_\_\_\_  
Brian Roy, Acting Chair  
Social Sciences Research Ethics Board

**Note:** Brock University is accountable for the research carried out in its own jurisdiction or under its auspices and may refuse certain research even though the REB has found it ethically acceptable.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of research at that site.

### Appendix 13.1

#### *Goal Prime: Intrinsic, Approach, Eudaimonic Condition*

**Below is short story about a university student. Please read the description over and consider it carefully before responding to the questions on the following page.**

Sarah is a university student who wants to do well in school. She chose to strive towards getting a degree in order to feel a sense of purpose.

Sarah has a part time job because she wants to start working towards a fulfilling career now.

Sarah has many friends, and enjoys developing close connections with others because she values working on developing meaningful relationships.

For personally valuable reasons, after finishing university Sarah will focus on achieving a career that is meaningful.

Because she feels it is right to, Sarah plans to continue on the same path of pursuing success and seeking fulfillment through her goals.

*Goal Prime: Intrinsic, Approach, Hedonic Condition*

**Below is short story about a university student. Please read the description over and consider it carefully before responding to the questions on the following page.**

Sarah is a university student who wants to do well in school. She chose to strive towards getting a degree in order to feel a sense of contentment.

Sarah has a part time job because she wants to start working towards an enjoyable career now.

Sarah has many friends, and enjoys developing close connections with others because she values working on developing satisfying relationships.

For personally valuable reasons, after finishing university Sarah will focus on achieving a career that is enjoyable.

Because she feels it is right to, Sarah plans to continue on the same path of pursuing success and seeking satisfaction through her goals.

*Goal Prime: Intrinsic, Avoidance, Eudaimonic Condition*

**Below is short story about a university student. Please read the description over and consider it carefully before responding to the questions on the following page.**

Sarah is a university student who wants to do well in school. She chose to avoid not getting a degree in order to feel a sense of purpose.

Sarah has a part time job because she wants to start staying away from not having a fulfilling career now.

Sarah has many friends, and enjoys developing close connections with others because she values avoiding losing meaningful relationships.

For personally valuable reasons, after finishing university Sarah will focus on steering clear of a career that is not meaningful.

Because she feels it is right to, Sarah plans to continue on the same path of playing it safe and seeking fulfillment through her goals.

*Goal Prime: Intrinsic, Avoidance, Hedonic Condition*

**Below is short story about a university student. Please read the description over and consider it carefully before responding to the questions on the following page.**

Sarah is a university student who wants to do well in school. She chose to avoid not getting a degree in order to feel a sense of contentment.

Sarah has a part time job because she wants to start staying away from not having an enjoyable career now.

Sarah has many friends, and enjoys developing close connections with others because she values avoiding losing satisfying relationships.

For personally valuable reasons, after finishing university Sarah will focus on steering clear of a career that is not enjoyable.

Because she feels it is right to, Sarah plans to continue on the same path of playing it safe and seeking satisfaction through her goals.

*Goal Prime: Extrinsic, Approach, Eudaimonic Condition*

**Below is short story about a university student. Please read the description over and consider it carefully before responding to the questions on the following page.**

Sarah is a university student who wants to do well in school. She feels pressured to strive towards getting a degree in order to feel a sense of purpose.

Sarah has a part time job because people say she should start working towards a fulfilling career now.

Sarah has many friends, and enjoys developing close connections with others because society values those who work on developing meaningful relationships.

Because it is socially desirable, after finishing university Sarah will focus on achieving a career that is meaningful.

Because she feels external pressure to, Sarah plans to continue on the same path of pursuing success and seeking fulfillment through her goals.



*Goal Prime: Extrinsic, Approach, Hedonic Condition*

**Below is short story about a university student. Please read the description over and consider it carefully before responding to the questions on the following page.**

Sarah is a university student who wants to do well in school. She feels pressured to strive towards getting a degree in order to feel a sense of contentment.

Sarah has a part time job because people say she should start working towards an enjoyable career now.

Sarah has many friends, and enjoys developing close connections with others because society values those who work on developing satisfying relationships.

Because it is socially desirable, after finishing university Sarah will focus on achieving a career that is enjoyable.

Because she feels external pressure to, Sarah plans to continue on the same path of pursuing success and seeking satisfaction through her goals.

*Goal Prime: Extrinsic, Avoidance, Eudaimonic Condition*

**Below is short story about a university student. Please read the description over and consider it carefully before responding to the questions on the following page.**

Sarah is a university student who wants to do well in school. She feels pressure to avoid not getting a degree in order to feel a sense of purpose.

Sarah has a part time job because people say she should start staying away from not having a fulfilling career now.

Sarah has many friends, and enjoys developing close connections with others because society values those who avoid losing meaningful relationships.

Because it is socially desirable, after finishing university Sarah will focus on steering clear of a career that is not meaningful.

Because she feels external pressure to, Sarah plans to continue on the same path of playing it safe and seeking fulfillment through her goals.

***Goal Prime: Extrinsic, Avoidance, Hedonic Condition***

**Below is short story about a university student. Please read the description over and consider it carefully before responding to the questions on the following page.**

Sarah is a university student who wants to do well in school. She feels pressure to avoid not getting a degree in order to feel a sense of contentment.

Sarah has a part time job because people say she should start staying away from not having an enjoyable career now.

Sarah has many friends, and enjoys developing close connections with others because society values those who avoid losing satisfying relationships.

Because it is socially desirable, after finishing university Sarah will focus on steering clear of a career that is not enjoyable.

Because she feels external pressure to, Sarah plans to continue on the same path of playing it safe and seeking satisfaction through her goals.

**Appendix 13.2*****Transition and Manipulation Check: Intrinsic, Approach, Eudaimonic Condition***

**Please answer the following questions in the space provided below.**

1. Sarah's goals were set for herself based on what she chose to do.
  - a. True                      False
  - b. Describe one goal that you have set for yourself based what you chose to do.
  
2. Sarah reached her goals by working to achieve the things she wanted.
  - a. True                      False
  - b. Describe one goal that you have reached by working to achieve something.
  
3. Sarah wanted a sense of meaning and purpose from her goals.
  - a. True                      False
  - b. Describe one goal from which you wanted a sense of meaning and purpose.

***Transition and Manipulation Check: Intrinsic, Approach, Hedonic Condition***

**Please answer the following questions in the space provided below.**

1. Sarah's goals were set for herself based on what she chose to do.
  - a. True                      False
  - b. Describe one goal that you have set for yourself based what you chose to do.
  
2. Sarah reached her goals by working to achieve the things she wanted.
  - a. True                      False
  - b. Describe one goal that you have reached by working to achieve something.
  
3. Sarah wanted a sense of enjoyment and satisfaction from her goals.
  - a. True                      False
  - b. Describe one goal from which you wanted a sense of enjoyment and satisfaction.

***Transition and Manipulation Check: Intrinsic, Avoidance, Eudaimonic Condition***

**Please answer the following questions in the space provided below.**

1. Sarah's goals were set for herself based on what she chose to do.
  - a. True                      False
  - b. Describe one goal that you have set for yourself based what you chose to do.
  
2. Sarah reached her goals by trying to avoid the things she did not want.
  - a. True                      False
  - b. Describe one goal that you have reached by working to avoid something.
  
3. Sarah wanted a sense of meaning and purpose from her goals.
  - a. True                      False
  - b. Describe one goal from which you wanted a sense of meaning and purpose.

***Transition and Manipulation Check: Intrinsic, Avoidance, Hedonic Condition***

**Please answer the following questions in the space provided below.**

1. Sarah's goals were set for herself based on what she chose to do.
  - a. True                      False
  - b. Describe one goal that you have set for yourself based what you chose to do.
  
2. Sarah reached her goals by trying to avoid the things she did not want.
  - a. True                      False
  - b. Describe one goal that you have reached by working to avoid something.
  
3. Sarah wanted a sense of enjoyment and satisfaction from her goals.
  - a. True                      False
  - b. Describe one goal from which you wanted a sense of enjoyment and satisfaction.

***Transition and Manipulation Check: Extrinsic, Approach, Eudaimonic Condition***

**Please answer the following questions in the space provided below.**

1. Sarah's goals were set for her based on what others influenced or pressured her to do.
  - a. True                      False
  - b. Describe one goal that has been set for you based on what others influenced or pressured you to do.
  
2. Sarah reached her goals by working to achieve the things she wanted.
  - a. True                      False
  - b. Describe one goal that you have reached by working to achieve something.
  
3. Sarah wanted a sense of meaning and purpose from her goals.
  - a. True                      False
  - b. Describe one goal from which you wanted a sense of meaning and purpose.



***Transition and Manipulation Check: Extrinsic, Approach, Hedonic Condition***

**Please answer the following questions in the space provided below.**

1. Sarah's goals were set for her based on what others influenced or pressured her to do.
  - a. True                      False
  - b. Describe one goal that has been set for you based on what others influenced or pressured you to do.
  
2. Sarah reached her goals by working to achieve the things she wanted.
  - a. True                      False
  - b. Describe one goal that you have reached by working to achieve something.
  
3. Sarah wanted a sense of enjoyment and satisfaction from her goals.
  - a. True                      False
  - b. Describe one goal from which you wanted a sense of enjoyment and satisfaction.

***Transition and Manipulation Check: Extrinsic, Avoidance, Eudaimonic Condition***

**Please answer the following questions in the space provided below.**

1. Sarah's goals were set for her based on what others influenced or pressured her to do.
  - a. True                      False
  - b. Describe one goal that has been set for you based on what others influenced or pressured you to do.
  
2. Sarah reached her goals by trying to avoid the things she did not want.
  - a. True                      False
  - b. Describe one goal that you have reached by working to avoid something.
  
3. Sarah wanted a sense of meaning and purpose from her goals.
  - a. True                      False
  - b. Describe one goal from which you wanted a sense of meaning and purpose.

***Transition and Manipulation Check: Extrinsic, Avoidance, Hedonic Condition***

**Please answer the following questions in the space provided below.**

1. Sarah's goals were set for her based on what others influenced or pressured her to do.
  - a. True                      False
  - b. Describe one goal that has been set for you based on what others influenced or pressured you to do.
  
2. Sarah reached her goals by trying to avoid the things she did not want.
  - a. True                      False
  - b. Describe one goal that you have reached by working to avoid something.
  
3. Sarah wanted a sense of enjoyment and satisfaction from her goals.
  - a. True                      False
  - b. Describe one goal from which you wanted a sense of enjoyment and satisfaction.

### Appendix 13.3

#### *Goals List: Intrinsic Goals*

**People have all sorts of goals. On this and the following two pages, we would like you to think about the types of goals that you have, and to list these goals in three ways. \*Note that the goals you provide on one of lists may be similar to or different from the goals you provide on the other lists.**

Please think about your goals that have been chosen by you and set for personally valuable reasons, and because you want to pursue them. Please take a few moments to think about these kinds of goals and then list up to 5 goals that have been chosen by you and set for personally valuable reasons, in the space provided below.

1	
2	
3	
4	
5	

***Goals List: Extrinsic Goals***

Please think about your goals that have been externally influenced and set because you felt pressured to do so. Please take a few moments to think about these kinds of goals and then list up to 5 goals that have been externally influenced and set because you felt pressured to do so, in the space provided below.

1	
2	
3	
4	
5	

***Goals List: Approach Goals***

Please think about your goals that are about you trying to achieve something. Please take a few moments to think about these kinds of goals and then in the space provided below please list up to 5 of your goals that are about you achieving something.

1	
2	
3	
4	
5	

***Goals List: Avoidance Goals***

Please think about your goals that involve you trying to avoid something. Please take a few moments to think about these kinds of goals and then in the space provided below please list up to 5 of your goals that involve you avoiding something.

1	
2	
3	
4	
5	

***Goals List: Eudaimonic Goals***

Please think about your goals from which you want sense of meaning and purpose in something. Please take a few moments to think about these kinds of goals and then in the space provided below please list up to 5 of your goals from which you want sense of meaning and purpose in something.

1	
2	
3	
4	
5	



***Goals List: Hedonic Goals***

Please think about your goals from which you want a sense of enjoyment and satisfaction in something. Please take a few moments to think about these kinds of goals and then in the space provided below please list up to 5 of your goals from which you want a sense of enjoyment and satisfaction in something.

1	
2	
3	
4	
5	

## Appendix 14

### *Manipulation Check: All Conditions*

When you were answering the questions on the previous pages, to what extent were thinking about intrinsic goals (goals that you are pursuing based on personal reasons) versus extrinsic goals (goals you are pursuing because you feel pressed to)? Please check one box below.

I was thinking about ...

Extrinsic goals only	Mostly extrinsic goals	Intrinsic and extrinsic goals equally	Mostly intrinsic goals	Intrinsic goals only
1	2	3	4	5

When you were answering the questions on the previous pages, to what extent were thinking about approach goals (goals that you are pursuing by working towards something) versus avoidance goals (goals you are pursuing by avoiding an event/outcome)? Please check one box below.

I was thinking about ...

Avoidance goals only	Mostly avoidance goals	Approach and avoidance goals equally	Mostly approach goals	Approach goals only
1	2	3	4	5

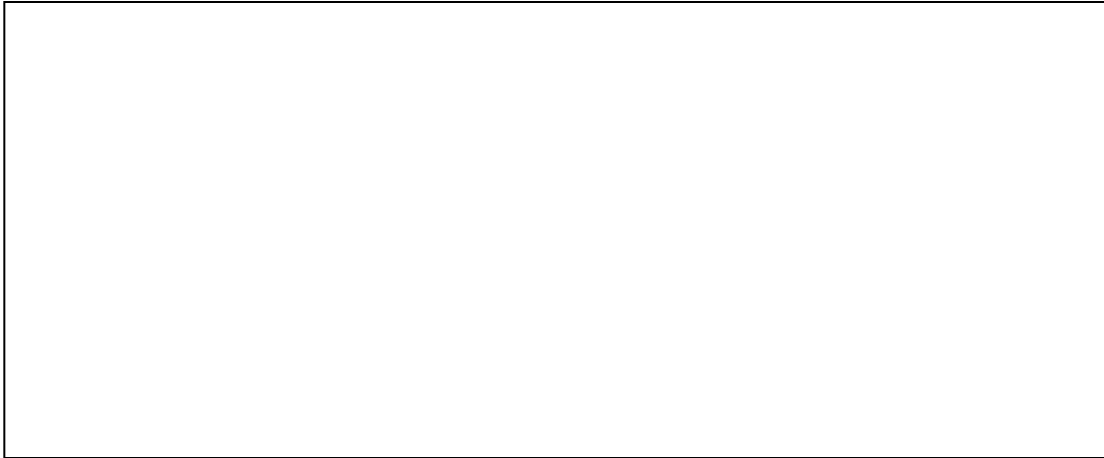
When you were answering the questions on the previous pages, to what extent were thinking about eudaimonic goals (goals that you are pursuing for meaning and purpose) versus hedonic goals (goals you are pursuing for satisfaction and enjoyment)? Please check one box below.

I was thinking about ...

Hedonic goals only	Mostly hedonic goals	Eudaimonic and hedonic goals equally	Mostly eudaimonic goals	Eudaimonic goals only
1	2	3	4	5

**Appendix 15*****Suspicion Check: All Conditions***

What do you think was the purpose or goal of the current study?



What do you think the researchers hoped or expected to find?



